AQUAMAP™ 80/100 Series

Owner's Manual



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Introduction

⚠ WARNING

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

Device Front View



①	Automatic backlight sensor
②	Power key
③	Device keys
④	Number pad (available on 10 inch models only)
⑤	SD memory card slot
⑥	Soft keys

Device Keys

⏻	Turns on and off the device when held.
	Adjusts the backlight and color mode when quickly pressed and released.
−	Zooms out of a chart or view.
+	Zooms in to a chart or view.
◀ ▶ ▼ ▲	Scrolls, highlights options, and moves the cursor.
SELECT	Acknowledges messages and selects options.
BACK	Returns to the previous screen.
MARK	Saves the present location as a waypoint.
HOME	Returns to the Home screen.
MENU	Opens a menu of options for the page, when applicable.
	Closes a menu, when applicable.

Using the Shortcut Key

You can quickly open a menu of commonly used options from the chart, sonar, and radar pages. The contents of the shortcut menu very, based on the page you have open.

- On the chart, sonar, and radar pages, select ≪ to open the shortcut menu.
- To show or hide the shortcut key, select **Settings** > **System** > **Shortcut Key**.

Manual Conventions

In this manual, the term “select” is used to describe these actions.

- Using the arrow keys to highlight a menu item, and then pressing SELECT.
- Pressing a key, such as SELECT or MENU.
- Pressing a soft key next to the specified item.

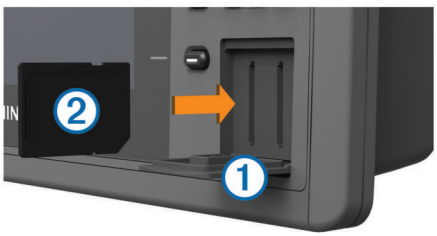
When you are instructed to select multiple items in a series, small arrows appear in the text. For example, "select **MENU** > **Add**," indicates that you need to press the MENU hard key, and then press the soft key next to the Add option.

The images in this manual are for reference only and may not match your device exactly.

Inserting Memory Cards

You can use optional memory cards in the chartplotter. Map cards allow you to view high-resolution satellite imagery and aerial reference photos of ports, harbors, marinas, and other points of interest. You can use blank memory cards to record sonar data and transfer data such as waypoints, routes, and tracks to another compatible Garmin® chartplotter or a computer.

1. Open the access door ① on the front of the chartplotter.



2. Insert the memory card ② with the label facing to the right.
3. Press the card in until it clicks.
4. Close the door.

Loading the New Software on a Memory Card

The device may contain a software-update memory card. If so, follow the instructions provided with the card. If a software update memory card is not included, you must copy the software update to a memory card.

1. Insert a memory card into the card slot on the computer.
2. Go to www.garmin.com.sg/softwareupdate/onthewater.
3. Select AQUAMAP 80/100.
4. Select **Download**.
5. Read and agree to the terms.
6. Select **Download**.
7. Select **Run**.
8. Select the drive associated with the memory card, and select **Next** > **Finish**.

Updating the Device Software

Before you can update the software, you must obtain a software-update memory card or load the latest software onto a memory card.

1. Turn on the chartplotter.
2. After the home screen appears, insert the memory card into the card slot.

   NOTE: In order for the software update instructions to appear, the device must be fully booted before the card is inserted.
3. Follow the on-screen instructions.
4. Wait several minutes while the software update process completes.

   The device returns to normal operation after the software update process is complete.
5. Remove the memory card.

   NOTE: If the memory card is removed before the device restarts fully, the software update is not complete.

Contacting Garmin Product Support

Go to www.garmin.com.sg/support for in-country support information.

GPS Satellite Signals

When you turn on the chartplotter, the GPS receiver must collect satellite data and establish the current location. When the chartplotter acquires satellite signals, appears at the top of the Home screen. When the chartplotter loses satellite signals, disappears and a flashing question mark appears over on the chart.

For more information about GPS, go to www.garmin.com/aboutGPS.

Adjusting the Backlight

1. Select **Settings** > **System** > **Display** > **Backlight**.

   TIP: Press from any screen to access the backlight settings.
2. Select an option:
   - Adjust the backlight level.
   - Select **Auto Backlight** or **Auto**.

Adjusting the Color Mode

1. Select **Settings** > **System** > **Display** > **Color Mode**.

   TIP: Press from any screen to access the color settings.
2. Select an option.

Customizing the Home Screen

You can add items to and rearrange items on the Home screen.

1. From the Home screen, select **Customize Home**.
2. Select an option:
   - To rearrange an item, select **Rearrange**, select the item to move, and select the new location.
   - To add an item to the Home screen, select **Add**, and select the new item.
   - To remove an item you have added to the Home screen, select **Remove**, and select the item.

Setting the Vessel Type

You can select your boat type to configure the chartplotter settings and to use features customized for your boat type.

1. Select **Settings** > **My Vessel** > **Vessel Type**.
2. Select **Powerboat** or **Sailboat**.

Charts and 3D Chart Views

The charts and 3D chart views that are available depend on the map data and accessories used.

You can access the charts and 3D chart views by selecting Charts.

Navigation Chart: Shows navigation data available on your pre-loaded maps and from supplemental maps, if available. The data includes buoys, lights, cables, depth soundings, marinas, and tide stations in an overhead view.

Perspective 3D: Provides a view from above and behind the boat (according to your course) and provides a visual navigation aid. This view is helpful when navigating tricky shoals, reefs, bridges, or channels, and is beneficial when trying to identify entry and exit routes in unfamiliar harbors or anchorages.

Mariner's Eye 3D: Shows a detailed, three-dimensional view from above and behind the boat (according to your course) and provides a visual navigation aid. This view is helpful when navigating tricky shoals, reefs, bridges, or channels, and when trying to identify entry and exit routes in unfamiliar harbors or anchorages.

NOTE: Mariner's Eye 3D and Fish Eye 3D chart views are available with premium charts, in some areas.

Fish Eye 3D: Provides an underwater view that visually represents the sea floor according to the chart information. When a sonar transducer is connected, suspended targets (such as fish) are indicated by red, green, and yellow spheres. Red indicates the largest targets and green indicates the smallest.

Fishing Chart: Provides a detailed view of the bottom contours and depth soundings on the chart. This chart removes navigational data from the chart, provides detailed bathymetric data, and enhances bottom contours for depth recognition. This chart is best for offshore deep-sea fishing.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

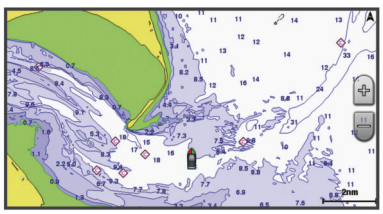
Radar Overlay: Superimposes radar information on the Navigation chart or the Fishing chart, when the chartplotter is connected to a radar. This feature is not available with all models.

Navigation Chart and Offshore Fishing Chart

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

The Navigation and Fishing charts allow you to plan your course, view map information, and follow a route. The Fishing chart is for offshore fishing.

To open the Navigation chart, select **Charts** > **Navigation Chart**.



To open the Fishing chart, select **Charts** > **Fishing Chart**.

Zooming In and Out of the Chart

The zoom level is indicated by the scale number at the bottom of the chart. The bar under the scale number represents that distance on the chart.

- Select to zoom out.
- Select to zoom in.

Panning the Chart with the Keys

You can move the chart to view an area other than your present location.

1. From the chart, use the arrow keys.
2. Select **BACK** to stop panning and return the screen to your present location.

   TIP: To return to panning, select **MENU** > **Continue Panning**.

Selecting an Item on the Map Using the Device Keys

1. From a chart or 3D chart view, select , , , or to move the cursor.
2. Select **SELECT**.

Chart Symbols

This table contains some of the common symbols you might see on the detailed charts.

Icon	Description
	Buoy
	Information

Icon	Description
	Marine services
	Tide station
	Current station
	Overhead photo available
	Perspective photo available

Other features common to most charts include depth contour lines, intertidal zones, spot soundings (as depicted on the original paper chart), navigational aids and symbols, obstructions, and cable areas.

Viewing Location and Object Information on a Chart

You can view information about a location or an object on the Navigation chart or the Fishing chart.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a location or object.

   A list of options appears along the right side of the chart. The options that appear vary based on the location or object you selected.
2. Select an option:
   - To view details of objects in the vicinity of the cursor, select **Review**.

     NOTE: Review does not appear if the cursor is not near an object. If the cursor is near only one object, the name of the object appears.
   - To navigate to the selected location, select **Navigate To**.
   - To mark a waypoint at the cursor location, select **New Waypoint**.
   - To view the distance and bearing of the object from your current location, select **Measure Distance**.

     The distance and bearing appear on the screen. Select **Set Reference** to measure from a location other than your current location.
   - To view tide, current, celestial, chart notes, or local services information near the cursor, select **Information**.

Navigating to a Point on the Chart

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings, and steer to avoid land, shallow water, and other dangerous objects.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

NOTE: Auto Guidance is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a location.
2. If necessary, select **SELECT**.
3. Select **Navigate To**.
4. Select an option:
   - To navigate directly to the location, select **Go To**.
   - To create a route to the location, including turns, select **Route To**.
   - To use Auto Guidance, select **Guide To**.
5. Review the course indicated by the magenta line.

   NOTE: When using Auto Guidance, a gray segment within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the settings for minimum safe water depth and minimum safe obstacle height.
6. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

Viewing Details about Navaids

From the Navigation chart, Fishing chart, Perspective 3D chart view, or Mariner's Eye 3D chart view, you can view details about various types of navigation aids, including beacons, lights, and obstructions.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

NOTE: Mariner's Eye 3D and Fish Eye 3D chart views are available with premium charts, in some areas.

1. From a chart or 3D chart view, select a navaid.
2. If necessary, select **Review**.
3. Select the name of the navaid.

Premium Charts

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

NOTE: Not all models support all charts.

Optional premium charts, such as BlueChart® g2 Vision®, allow you to get the most out of your chartplotter. In addition to detailed marine charting, premium charts may contain these features, which are available in some areas.

Mariner's Eye 3D: Provides a view from above and behind the boat for a three-dimensional navigation aid.

Fish Eye 3D: Provides an underwater, three-dimensional view that visually represents the sea floor according to the information on the chart.

Fishing Charts: Shows the chart with enhanced bottom contours and without navigational data. This chart works well for offshore deep-sea fishing.

High Resolution Satellite Imagery: Provides high-resolution satellite images for a realistic view of the land and water on the Navigation chart (*Showing Satellite Imagery on the Navigation Chart*, page 4).

Auto Guidance: Uses specified safe depth, safe height, and chart data to determine the best course to your destination. Auto Guidance is available when you navigate to a destination using Guide To.

Viewing Tide Station Information

on the chart indicates a tide station. You can view a detailed graph for a tide station to help predict the tide level at different times or on different days.

NOTE: This feature is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a tide station.

   Tide direction and tide level information appear near .
2. Select an option to view additional station information:
   - Select the station name.
   - If more than one item is in the vicinity, select **Review**, and select the station name.

Animated Tide and Current Indicators

NOTE: This feature is available with premium charts, in some areas.

You can view indicators for animated tide station and current direction on the Navigation chart or the Fishing chart. You must also enable animated icons in the chart settings (*Showing and Configuring Tides and Currents*, page 4).

An indicator for a tide station appears on the chart as a vertical bar graph with an arrow. A red arrow pointing downward indicates a falling tide, and a blue arrow pointing upward indicates a rising tide. When you move the cursor over the tide station indicator, the height of the tide at the station appears above the station indicator.

Current direction indicators appear as arrows on the chart. The direction of each arrow indicates the direction of the current at a specific location on the chart. The color of the current arrow indicates the range of speed for the current at that location. When you move the cursor over the current direction indicator, the specific current speed at the location appears above the direction indicator.

Color	Current Speed Range
Yellow	0 to 1 knot
Orange	1 to 2 knots
Red	2 or more knots

Showing and Configuring Tides and Currents

NOTE: This feature is available with premium charts, in some areas.

You can show static or animated tide and current station indicators on the Navigation chart or Fishing chart.

1. From the Navigation or Fishing chart, select **MENU** > **Chart Setup** > **Tides & Currents**.
2. Select an option:
   - To show current station indicators and tide station indicators on the chart, select **On**.
   - To show animated tide station indicators and animated current direction indicators on the chart, select **Animated**.

Showing Satellite Imagery on the Navigation Chart

NOTE: This feature is available with premium charts, in some areas.

You can overlay high-resolution satellite images on the land or on both land and sea portions of the Navigation chart.

NOTE: When enabled, high-resolution satellite images are present only at lower zoom levels. If you cannot see high-resolution images in your optional chart region, you can select + to zoom in. You also can set the detail level higher by changing the map zoom detail.

1. From the Navigation chart, select **MENU** > **Chart Setup** > **Satellite Photos**.
2. Select an option:
   - Select **Land Only** to show standard chart information on the water, with photos overlaying the land.
   - Select **Photo Map Blend** to show photos on both the water and the land at a specified opacity. Use the slider bar to adjust the photo opacity. The higher you set the percentage, the more the satellite photos cover both land and water.

Automatic Identification System

The Automatic Identification System (AIS) enables you to identify and track other vessels, and alerts you to area traffic. When connected to an external AIS device, the chartplotter can show some AIS information about other vessels that are within range, that are equipped with a transponder, and that are actively transmitting AIS information. The information reported for each vessel includes the Maritime Mobile Service Identity (MMSI), location, GPS speed, GPS heading, time that has elapsed since the last position of the vessel was reported, nearest approach, and time to the nearest approach.

AIS Targeting Symbols

Symbol	Description
	AIS vessel. The vessel is reporting AIS information. The direction in which the triangle is pointing indicates the direction in which the AIS vessel is moving.
	Target is selected.
	Target is activated. The target appears larger on the chart. A green line attached to the target indicates the heading of the target. The MMSI, speed, and direction of the vessel appear beneath the target, if the details setting has been set to Show. If the AIS transmission from the vessel is lost, a message banner appears.
	Target is lost. A green X indicates that the AIS transmission from the vessel is lost, and the chartplotter displays a message banner asking whether the vessel should continue to be tracked. If you discontinue vessel tracking, the lost target symbol disappears from the chart or the 3D chart view.
	Dangerous target in range. The target flashes while an alarm sounds and a message banner appears. After the alarm has been acknowledged, a solid red triangle with a red line attached to it indicates the location and the heading of the target. If the safe-zone collision alarm has been set to Off, the target flashes, but the audible alarm does not sound and the alarm banner does not appear. If the AIS transmission from the vessel is lost, a message banner appears.
	Dangerous target is lost. A red X indicates that the AIS transmission from the vessel is lost, and the chartplotter displays a message banner asking whether the vessel should continue to be tracked. If you discontinue vessel tracking, the lost dangerous target symbol disappears from the chart or the 3D chart view.
	The location of this symbol indicates the closest point of approach to a dangerous target, and the numbers near the symbol indicate the time to the closest point of approach to that target.

Viewing a List of AIS Threats

From a chart or 3D chart view, select **MENU** > **Other Vessels** > **AIS/MARPA List**.

Heading and Projected Course of Activated AIS Targets

When heading and course over ground information are provided by an activated AIS target, the heading of the target appears on a chart as a solid line attached to the AIS target symbol. A heading line does not appear on a 3D chart view.

The projected course of an activated AIS target appears as a dashed line on a chart or a 3D chart view. The length of the projected course line is based on the value of the projected heading setting. If an activated AIS target is not transmitting speed information, or if the vessel is not moving, a projected course line does not appear. Changes in the speed, course over ground, or rate of turn information transmitted by the vessel can impact the calculation of the projected course line.

When course over ground, heading, and rate of turn information are provided by an activated AIS target, the projected course of the target is calculated based on the course over ground and the rate of turn information. The direction in which the target is turning, which is also based on the rate of turn information, is indicated by the direction of the barb at the end of the heading line. The length of the barb does not change.



When course over ground and heading information are provided by an activated AIS target, but rate of turn information is not provided, the projected course of the target is calculated based on the course over ground information.

Activating a Target for an AIS Vessel

1. From a chart or a 3D chart view, select an AIS vessel.
2. Select **AIS Vessel** > **Activate Target**.

Viewing Information about a Targeted AIS Vessel

You can view the AIS signal status, MMSI, GPS speed, GPS heading, and other information that is reported about a targeted AIS vessel.

1. From a chart or a 3D chart view, select an AIS vessel.
2. Select **AIS Vessel**.

Deactivating a Target for an AIS Vessel

1. From a chart or a 3D chart view, select an AIS vessel.
2. Select **AIS Vessel** > **Deactivate Target**.

Showing AIS and MARPA Vessels on a Chart or on a 3D Chart View

Before you can show AIS vessels on a chart, you must have an external AIS device and active transponder signals from other vessels. Mini Automatic Radar Plotting Aid (MARPA) functionality works with radar.

You can configure how other vessels appear on a chart or on a 3D chart view. The display range and MARPA settings configured for one chart or one 3D chart view are applied only to that chart or to that 3D chart view. The details, projected heading, and trails settings configured for one chart or one 3D chart view are applied to all charts and to all 3D chart views.

1. From a chart or a 3D chart view, select **MENU** > **Other Vessels** > **AIS/MARPA Dis. Setup**.
2. Select an option:
   - To indicate the distance from your location in which AIS vessels appear, select **AIS Dis. Range**, and select a distance.
   - To show MARPA-tagged vessels, select **MARPA** > **Show**.
   - To show details about AIS-activated and MARPA-tagged vessels, select **Details** > **Show**.
   - To set the projected heading time for AIS-activated and MARPA-tagged vessels, select **Proj. Heading**, and enter the time.
   - To show the tracks of AIS vessels, select the length of the track that appears using a trail, select **Trails**, and select the length.

Setting the Safe-Zone Collision Alarm

Before you can set a safe-zone collision alarm, you must have a compatible chartplotter connected to an AIS device.

The safe-zone collision alarm is used only with AIS. The safe zone is used for collision avoidance, and can be customized.

1. Select **Settings** > **Alarms** > **AIS** > **AIS/MARPA Alarm** > **On**.

   A message banner appears and an alarm sounds when an AIS-activated vessel enters the safe-zone area around your boat. The object is also labeled as dangerous on the screen. When the alarm is off, the message banner and audible alarm are disabled, but the object is still labeled as dangerous on the screen.
2. Select **Range**.
3. Select a distance for the safe-zone radius around your vessel.
4. Select **Time To**.
5. Select a time at which the alarm will sound if a target is determined to intersect the safe zone.

   For example, to be notified of a pending intersection 10 minutes before it will likely occur, set Time To to 10, and the alarm will sound 10 minutes before the vessel intersects the safe zone.

AIS Distress Signals

Self-contained AIS distress signal devices transmit emergency position reports when activated. The chartplotter can receive signals from Search and Rescue Transmitters (SART), Emergency Position Indicating Radio Beacons (EPIRB), and other man overboard signals. Distress signal transmissions are different than standard AIS transmissions, so they appear differently on the chartplotter. Instead of tracking a distress signal transmission for collision avoidance, you track a distress signal transmission to locate and assist a vessel or person.

Navigating to a Distress Signal Transmission

When you receive a distress signal transmission, a distress signal alarm appears.

Select **Review** > **Go To** to begin navigation to the transmission.

AIS Distress Signal Device Targeting Symbols

Symbol	Description
	AIS distress signal device transmission. Select to see more information about the transmission and begin navigation.
	Transmission lost.
	Transmission test. Appears when a vessel initiates a test of their distress signal device, and does not represent a true emergency.
	Transmission test lost.

Enabling AIS Transmission Test Alerts

To avoid a large number of test alerts and symbols in crowded areas such as marinas, you can select to receive or ignore AIS test messages. To test an AIS emergency device, you must enable the chartplotter to receive test alerts.

1. Select **Settings** > **Alarms** > **AIS**.
2. Select an option:
   - To receive or ignore Emergency Position Indicating Radio Beacon (EPRIB) test signals, select **AIS-EPIRB Test**.
   - To receive or ignore Man Overboard (MOB) test signals, select **AIS-MOB Test**.
   - To receive or ignore Search and Rescue Transponder (SART) test signals, select **AIS-SART Test**.

Turning Off AIS Reception

AIS signal reception is turned on by default.

Select **Settings** > **Other Vessels** > **AIS** > **Off**.

All AIS functionality on all charts and 3D chart views is disabled. This includes AIS vessel targeting and tracking, collision alarms that result from AIS vessel targeting and tracking, and the display of information about AIS vessels.

Chart and 3D Chart View Settings

NOTE: Not all settings apply to all charts and 3D chart views. Some options require premium maps or connected accessories, such as radar.

These settings apply to the charts and 3D chart views, except the radar overlay and Fish Eye 3D (*Fish Eye 3D Settings*, page 7).

From a chart or a 3D chart view, select MENU.

Waypoints & Tracks: See *Waypoints and Tracks Settings on the Charts and Chart Views*, page 6.

Other Vessels: See *Other Vessel Settings*, page 24.

Surface Radar: Shows surface radar details on the Perspective 3D or Mariner's Eye 3D chart views.

Boundary Line: Adjusts fishing boundary lines to comply with legal, safety, or geographic fishing boundaries.

Navaids: Shows navigational aids on the Fishing chart.

Laylines: Adjusts the laylines, when in sailing mode (*Laylines Settings*, page 6).

Chart Setup: See *Navigation and Fishing Chart Setup*, page 6.

Overlay Numbers: See *Overlay Numbers Settings*, page 6. This might appear in the Chart Setup menu.

Chart Appearance: See *Chart Appearance Settings*, page 7. This might appear in the Chart Setup menu.

Waypoints and Tracks Settings on the Charts and Chart Views

From a chart or a 3D chart view, select **MENU** > **Waypoints & Tracks**.

Tracks: Shows tracks on the chart or 3D chart view.

Waypoints: Shows the Waypoints list (*Viewing a List of all Waypoints*, page 8).

New Waypoint: Creates a new waypoint.

Waypoint Display: Sets how to display waypoints on the chart.

Active Tracks: Shows the active track options menu.

Saved Tracks: Shows the list of saved tracks (*Viewing a List of Saved Tracks*, page 10).

Tracks Display: Sets which tracks to display on the chart based on track color.

Other Vessels Settings on the Charts and Chart Views

NOTE: These options require connected accessories, such as an AIS receiver or VHF radio.

From a chart or 3D chart view, select **MENU** > **Other Vessels**.

AIS/MARPA List: Shows the AIS list (*Viewing a List of AIS Threats*, page 4).

DSC List: Shows the DSC list (*DSC List*, page 16).

AIS/MARPA Dis. Setup: See *AIS Display Settings*, page 6.

DSC Trails: Shows the tracks of DSC vessels, and selects the length of the track that appears using a trail.

AIS/MARPA Alarm: Sets the safe-zone collision alarm (*Setting the Safe-Zone Collision Alarm*, page 5).

AIS Display Settings

NOTE: AIS requires the use of an external AIS device and active transponder signals from other vessels.

From a chart or 3D chart view, select **MENU** > **Other Vessels** > **AIS/MARPA Dis. Setup**.

AIS Dis. Range: Indicates the distance from your location within which AIS vessels appear.

Details: Shows details about AIS-activated vessels.

Proj. Heading: Sets the projected heading time for AIS-activated vessels.

Trails: Shows the tracks of AIS vessels, and select the length of the track that appears using a trail.

Laylines Settings

When in sailing mode (*Setting the Vessel Type*, page 2), you can display laylines on the navigation chart. Laylines can be especially helpful when racing.

From the navigation chart, select **MENU**.

Display: Adjusts how the laylines and vessel are shown on the chart, and adjusts the length of the laylines.

Sailing Angle: Allows you to select how the device calculates laylines. The Actual setting calculates the laylines by using the measured wind angle from the wind sensor. The Manual setting calculates the laylines by using manually entered windward and leeward angles.

Tide Correction: Corrects the laylines based on the tide.

Navigation and Fishing Chart Setup

NOTE: Not all settings apply to all charts and 3D chart views. Some settings require external accessories or applicable premium charts.

From the Navigation chart or Fishing chart, select **MENU** > **Chart Setup**.

Satellite Photos: Shows high-resolution satellite images on the land or on both land and sea portions of the Navigation chart, when certain premium maps are used (*Showing Satellite Imagery on the Navigation Chart*, page 4).

Tides & Currents: Shows current station indicators and tide station indicators on the chart (*Showing and Configuring Tides and Currents*, page 4).

Roses: Shows a compass rose around your boat, indicating compass direction oriented to the heading of the boat. A true wind direction or apparent wind direction indicator appears if the chartplotter is connected to a compatible marine wind sensor. When in sailing mode, true and apparent wind are shown on the wind rose.

Overlay Numbers: See *Overlay Numbers Settings*, page 6.

Chart Appearance: See *Chart Appearance Settings*, page 7.

Overlay Numbers Settings

From a chart, 3D chart view, the Radar screen, or a Combinations screen, select **MENU** > **Overlay Numbers**.

Edit Layout: Sets the layout of the data overlay, or data fields. You can select the data to be shown within each data field.

Nav. Inset: Shows the navigation inset when the vessel is navigating to a destination.

Navigation Inset Setup: Allows you to configure the navigation inset to show Route Leg Details, and to control when the inset appears before a turn or destination.

Compass Tape: Shows the compass tape data bar when the vessel is navigating to a destination.

Editing the Data Fields

You can change the data shown in the overlay numbers displayed on the charts and other screens.

1. From a screen that supports overlay numbers, select **MENU**.
2. If necessary, select **Chart Setup**.
3. Select **Overlay Numbers** > **Edit Layout**.
4. Select a layout.
5. Select a data field.
6. Select the type of data shown in the field.

   Available data options vary based on the chartplotter and network configuration.

Showing a Navigation Inset

You can control whether a navigation inset appears on some chart views. The navigation inset is shown only when the boat is navigating to a destination.

1. From a chart or 3D chart view, select **MENU**.
2. If necessary, select **Chart Setup**.
3. Select **Overlay Numbers** > **Nav. Inset** > **Auto**.
4. Select **Navigation Inset Setup**.
5. Complete an action:
   - To show waypoint velocity made good (VMG) when navigating a route with more than one leg, select **Route Leg Details** > **On**.
   - To show next-turn data based on distance, select **Next Turn** > **Distance**.

- To show next-turn data based on time, select **Next Turn** > **Time**.
- To indicate how the destination data appears, select **Destination**, and select an option.

Chart Appearance Settings

You can adjust the appearance of the different chart views. Each setting is specific for the type of chart view that you are in.

NOTE: Not all settings apply to all charts and 3D chart views and chartplotter models. Some options require premium maps or connected accessories, such as radar.

From a chart or 3D chart view, select **MENU** > **Chart Setup** > **Chart Appearance**.

Orientation: Sets the perspective of the map.

Detail: Adjusts the amount of detail shown on the map, at different zoom levels.

Heading Line: Shows and adjusts the heading line, which is a line drawn on the map from the bow of the boat in the direction of travel, and sets the data source for the heading line.

World Map: Uses either a basic world map or a shaded relief map on the chart. These differences are visible only when zoomed out too far to see the detailed charts.

Spot Depths: Turns on spot soundings and sets a dangerous depth. Spot depths that are equal to or more shallow than the dangerous depth are indicated by red text.

Safety Shading: Sets the shades from the shoreline to the specified depth.

Depth Range Shading: Specifies an upper and lower depth to shade between.

Symbols: Shows and configures the appearance of various symbols on the chart, such as the vessel icon, navaid symbols, land POIs, and light sectors.

Inset Map: Shows a map zoomed in on the vessel's location in the corner of the main map.

Style: Sets how the chart appears over 3D terrain.

Hazard Colors: Shows shallow water and land with a color scale. Blue indicates deep water, yellow is shallow water, and red is very shallow water.

Safe Depth: Sets the appearance of a safe depth for Mariner's Eye 3D.

NOTE: This setting affects only the appearance of hazard colors in Mariner's Eye 3D. It does not affect the safe water depth Auto Guidance setting or the sonar shallow water alarm setting.

Range Rings: Shows and configures the appearance of range rings, which help you to visualize distances in some chart views.

Lane Width: Specifies the width of the navigation lane, which is the magenta line in some chart views that indicates the course to your destination.

Fish Eye 3D Settings

NOTE: This feature is available with premium charts, in some areas.

From the Fish Eye 3D chart view, select MENU.

View: Sets the perspective of the 3D chart view.

Tracks: Shows tracks.

Sonar Cone: Shows a cone that indicates the area covered by the transducer.

Fish Symbols: Shows suspended targets.

Navigation with a Chartplotter

⚠ CAUTION

If your vessel has an autopilot system, a dedicated autopilot control display must be installed at each steering helm in order to disable the autopilot system.

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

NOTE: Auto Guidance is available with premium charts, in some areas.

NOTE: Mariner's Eye 3D and Fish Eye 3D chart views are available with premium charts, in some areas.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

To navigate, you must choose a destination, set a course or create a route, and follow the course or route. You can follow the course or the route on the Navigation chart, Fishing chart, Perspective 3D chart view, or Mariner's Eye 3D chart view.

Basic Navigation Questions

Question	Answer
How do I make the chartplotter point me in the direction in which I want to go (bearing)?	Navigate using Go To. See *Setting and Following a Direct Course Using Go To*, page 8.
How do I make the device guide me along a straight line (minimizing cross track) to a location using the shortest distance from the present location?	Build a single-leg route and navigate it using Route To. See *Creating and Navigating a Route From Your Present Location*, page 9.
How do I make the device guide me to a location while avoiding charted obstacles?	Build a multi-leg route and navigate it using Route To. See *Creating and Navigating a Route From Your Present Location*, page 9.
How do I make the device steer my automatic pilot?	Navigate using Route To. See *Creating and Navigating a Route From Your Present Location*, page 9.
Can the device create a path for me?	If you have premium maps that support Auto Guidance and are in an area covered by Auto Guidance, navigate using Auto Guidance. See *Setting and Following a Course Using Auto Guidance*, page 8.
How do I change the Auto Guidance settings for my boat?	See *Auto Guidance Line Configurations*, page 23.

Destinations

You can select destinations using various charts and 3D chart views or using the lists.

Searching for a Destination by Name

You can search for saved waypoints, saved routes, saved tracks, and marine services destinations by name.

1. Select **Nav Info** > **Search by Name**.
2. Enter at least a portion of the name of your destination.
3. If necessary, select **Done**.

   The 50 nearest destinations that contain your search criteria appear.
4. Select the destination.

Selecting a Destination Using the Navigation Chart

From the Navigation chart, select a destination.

Searching for a Destination Using Nav Info

1. Select **Nav Info**.
2. Select an option:
   - To view a list of preloaded locations and previously marked locations, select **Waypoints**.
   - To view a list of previously saved routes, select **Routes**.
   - To view a list of recorded tracks, select **Tracks**.
   - To view a list of slips, moorings, and other offshore points of interest, select **Offshore Services**.
   - To view a list of marinas and other inland points of interest, select **Inland Services**.
   - To search for a destination by name, select **Search by Name**.
3. Select a destination.

Searching for a Marine Services Destination

NOTE: This feature is available with premium charts, in some areas.

The chartplotter contains information for thousands of destinations offering marine services.

1. Select **Nav Info**.
2. Select **Offshore Services** or **Inland Services**.
3. If necessary, select the marine service category.

   The chartplotter shows a list of the nearest locations and the distance and bearing to each.
4. Select a destination.

   You can select ❮ or ❯ to view additional information or to show the location on a chart.

Courses

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings, and steer to avoid land, shallow water, and other dangerous objects.

NOTE: Auto Guidance is available with premium charts, in some areas.

You can set and follow a course to a destination using one of three methods: Go To, Route To, or Guide To.

Go To: Takes you directly to the destination.

Route To: Creates a route from your location to a destination, allowing you to add turns along the way.

Guide To: Create a path to a destination using Auto Guidance.

Setting and Following a Direct Course Using Go To

⚠ CAUTION

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings, and steer to avoid land, shallow water, and other dangerous objects.

You can set and follow a direct course from your current location to a selected destination.

1. Select a destination (*Destinations*, page 7).
2. Select **Navigate To** > **Go To**.

   A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your current location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.
3. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.
4. If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

Setting and Following a Course Using Auto Guidance

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

NOTE: Auto Guidance is available with premium charts, in some areas.

1. Select a destination (*Destinations*, page 7).
2. Select **Navigate To** > **Guide To**.
3. Review the course indicated by the magenta Auto Guidance line.
4. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

   NOTE: When using Auto Guidance, a gray segment within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the settings for minimum safe water depth and minimum safe obstacle height.

Stopping Navigation

From the Navigation chart or Fishing chart, select **MENU** > **Stop Navigation**.

Waypoints

Waypoints are locations you record and store in the device.

Marking Your Present Location as a Waypoint

From any screen, select **MARK**.

Creating a Waypoint at a Different Location

1. Select **Nav Info** > **Waypoints** > **New Waypoint**.
2. Select an option:
   - To create the waypoint by entering position coordinates, select **Enter Coordinates**, and enter the coordinates.
   - To create the waypoint using a chart, select **Use Chart**, select the location, and select **Select**.

Marking and Starting Navigation to an MOB Location

When you mark a waypoint, you can designate it as a man overboard (MOB) location.

Select an option:

- From any screen, select **MARK** > **Man Overboard**.
- From the Home screen, select **Man Overboard** > **Yes**.

An international MOB symbol marks the active MOB point and the chartplotter sets a direct course back to the marked location.

Viewing a List of all Waypoints

Select **Nav Info** > **Waypoints**.

Editing a Saved Waypoint

1. Select **Nav Info** > **Waypoints**.
2. Select a waypoint.
3. Select **Edit Waypoint**.
4. Select an option:
   - To add a name, select **Name**, and enter a name.
   - To change the symbol, select **Symbol**.
   - To change the depth, select **Depth**.

- To change the water temperature, select **Water Temp.**.
- To change the comment, select **Comment**.
- To move the position of the waypoint, select **Move**.

Moving a Saved Waypoint

1. Select **Nav Info** > **Waypoints**.
2. Select a waypoint.
3. Select **Edit Waypoint** > **Move**.
4. Indicate a new location for the waypoint:
   - To move the waypoint while using the chart, select **Use Chart**, select a new location on the chart, and select **Move Waypoint**.
   - To move the waypoint using coordinates, select **Enter Coordinates**, and enter the new coordinates.

Browsing for and Navigating to a Saved Waypoint

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings, and steer to avoid land, shallow water, and other dangerous objects.

NOTE: Auto Guidance is available with premium charts, in some areas.

Before you can navigate to a waypoint, you must create a waypoint.

1. Select **Nav Info** > **Waypoints**.
2. Select a waypoint.
3. Select **Navigate To**.
4. Select an option:
   - To navigate directly to the location, select **Go To**.
   - To create a route to the location, including turns, select **Route To**.
   - To use Auto Guidance, select **Guide To**.
5. Review the course indicated by the magenta line.

   NOTE: When using Auto Guidance, a gray segment within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the settings for minimum safe water depth and minimum safe obstacle height.
6. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

Deleting a Waypoint or an MOB

1. Select **Nav Info** > **Waypoints**.
2. Select a waypoint or an MOB.
3. Select **Delete**.

Deleting All Waypoints

Select **Nav Info** > **Manage Data** > **Clear User Data** > **Waypoints** > **All**.

Routes

Creating and Navigating a Route From Your Present Location

You can create and immediately navigate a route on the Navigation chart or the Fishing chart. This procedure does not save the route or the waypoint data.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a destination.
2. Select **Navigate To** > **Route To**.
3. Select the location of the last turn before the destination.
4. Select **Add Turn**.
5. If necessary, repeat step 3 and 4 to add additional turns, working backward from the destination to the present location of your vessel.

   The last turn you add should be the first turn you make, starting from your present location. It should be the turn closest to your vessel.
6. If necessary, select **MENU**.
7. Select **Navigate Route**.
8. Review the course indicated by the magenta line.
9. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

Creating and Saving a Route

This procedure saves the route and all the waypoints in it. The starting point can be your present location or another location.

1. Select **Nav Info** > **Routes** > **New Route** > **Use Chart**.
2. Select the starting location of the route.
3. Select **Add Turn**.
4. Select the location of the next turn on the chart.
5. Select **Add Turn**.

   The chartplotter marks the location of the turn with a waypoint.
6. If necessary, repeat steps 4 and 5 to add more turns.
7. Select the final destination.

Viewing a List of Routes

Select **Nav Info** > **Routes**.

Editing a Saved Route

You can change the name of a route or change the turns the route contains.

1. Select **Nav Info** > **Routes**.
2. Select a route.
3. Select **Edit Route**.
4. Select an option:
   - To change the name, select **Name**, and enter the name.
   - To select a waypoint from the turn list, select **Edit Turns** > **Use Turn List**, and select a waypoint from the list.
   - To select a turn using the chart, select **Edit Turns** > **Use Chart**, and select a location on the chart.

Browsing for and Navigating a Saved Route

Before you can browse a list of routes and navigate to one of them, you must create and save at least one route.

1. Select **Nav Info** > **Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Select an option:
   - To navigate the route from the starting point used when the route was created, select **Forward**.
   - To navigate the route from the destination point used when the route was created, select **Backward**.

   A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your present location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.
5. Review the course indicated by the magenta line.

6. Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.
7. If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

Browsing for and Navigating Parallel to a Saved Route

Before you can browse a list of routes and navigate to one of them, you must create and save at least one route.

1. Select **Nav Info** > **Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Select **Offset** to navigate parallel to the route, offset from it by a specific distance.
5. Indicate how to navigate the route:
   - To navigate the route from the starting point used when the route was created, to the left of the original route, select **Forward – Port**.
   - To navigate the route from the starting point used when the route was created, to the right of the original route, select **Forward – Starboard**.
   - To navigate the route from the destination point used when the route was created, to the left of the original route, select **Backward – Port**.
   - To navigate the route from the destination point used when the route was created, to the right of the original route, select **Backward – Starboard**.
6. If necessary, select **Done**.

   A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your present location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.
7. Review the course indicated by the magenta line.
8. Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.
9. If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

Converting a Route to a Boundary Line

Before you can convert a route to a boundary line, you must create the route. Your list of saved boundary lines must not be full.

1. Select **Nav Info** > **Routes**.
2. Select a route.
3. Select **Convert to boundary**.

Deleting a Saved Route

1. Select **Nav Info** > **Routes**.
2. Select a route.
3. Select **Delete**.

Deleting All Saved Routes

Select **Nav Info** > **Manage Data** > **Clear User Data** > **Routes**.

Tracks

A track is a recording of the path of your boat. The track currently being recorded is called the active track, and it can be saved. You can show tracks in each chart or 3D chart view.

Showing Tracks

From a chart or a 3D chart view, select **MENU** > **Waypoints & Tracks** > **Tracks** > **On**.

A trailing line on the chart indicates your track.

Setting the Color of the Active Track

1. Select **Nav Info** > **Tracks** > **Active Track Options** > **Track Color**.
2. Select a track color.

Saving the Active Track

The track currently being recorded is called the active track.

1. Select **Nav Info** > **Tracks** > **Save Active Track**.
2. Select an option:
   - Select the time the active track began.
   - Select **Entire Log**.
3. Select **Save**.

Viewing a List of Saved Tracks

Select **Nav Info** > **Tracks** > **Saved Tracks**.

Editing a Saved Track

1. Select **Nav Info** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Edit Track**.
4. Select an option:
   - Select **Name**, and enter the new name.
   - Select **Track Color**, and select a color.

Saving a Track as a Route

1. Select **Nav Info** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Edit Track** > **Save Route**.

Browsing for and Navigating a Recorded Track

Before you can browse a list of tracks and navigate to them, you must record and save at least one track (*Tracks*, page 10).

1. Select **Nav Info** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Follow Track**.
4. Select an option:
   - To navigate the track from the starting point used when the track was created, select **Forward**.
   - To navigate the track from the destination point used when the track was created, select **Backward**.
5. Review the course indicated by the colored line.
6. Follow the line along each leg in the route, steering to avoid land, shallow water, and other obstacles.

Deleting a Saved Track

1. Select **Nav Info** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Delete**.

Deleting All Saved Tracks

Select **Nav Info** > **Manage Data** > **Clear User Data** > **Saved Tracks**.

Retracing the Active Track

The track currently being recorded is called the active track.

1. Select **Nav Info** > **Tracks** > **Follow Active Track**.
2. Select an option:
   - Select the time the active track began.
   - Select **Entire Log**.
3. Review the course indicated by the colored line.
4. Follow the colored line, steering to avoid land, shallow water, and other obstacles.

Clearing the Active Track

Select **Nav Info** > **Tracks** > **Clear Active Track**.

The track memory is cleared, and the active track continues to be recorded.

Managing the Track Log Memory During Recording

1. Select **Nav Info** > **Tracks** > **Active Track Options**.
2. Select **Record Mode**.
3. Select an option:
   - To record a track log until the track memory is full, select **Fill**.
   - To continuously record a track log, replacing the oldest track data with new data, select **Wrap**.

Configuring the Recording Interval of the Track Log

You can indicate the frequency at which the track plot is recorded. Recording more frequent plots is more accurate but fills the track log faster. The resolution interval is recommended for the most efficient use of memory.

1. Select **Nav Info** > **Tracks** > **Active Track Options** > **Record Interval** > **Interval**.
2. Select an option:
   - To record the track based on a distance between points, select **Distance** > **Change**, and enter the distance.
   - To record the track based on a time interval, select **Time** > **Change**, and enter the time interval.
   - To record the track plot based on a variance from your course, select **Resolution** > **Change**, and enter the maximum error allowed from the true course before recording a track point.

Boundary Lines

You can create boundary lines using the map or using waypoints.

Setting a Boundary Line on a Navigation Chart

Setting boundary lines manually allows you to have more control of your fishing and navigation area.

1. From the Fishing chart or Navigation chart, select **MENU** > **Boundary Line** > **New Boundary** > **Use Chart**.
2. Use the arrow keys to draw a boundary line.

   TIP: You can draw lines in any direction. To draw diagonal lines, press a corner between the arrow keys.
3. Select **Add Turn** to change the direction of your boundary line.

Setting a Boundary Line on a Navigation Chart Using Waypoints

1. From the Navigation chart or Fishing chart, select **MENU** > **Boundary Line** > **New Boundary** > **Use Waypoint List**.
2. Select a waypoint, and select **Add Turns**.
3. Repeat step 2 to add more waypoints to the boundary line.

Editing a Boundary Line

You can edit the color and width of a boundary line. You can also select a boundary type, rename a boundary line, show or hide a boundary line, or edit the turns of a boundary line.

1. From the Fishing chart or Navigation chart, select **MENU** > **Boundary Line** > **Review** > **Edit Boundary**.
2. Select an option to edit.

Deleting a Boundary Line

1. From the Navigation chart or Fishing chart, select **MENU** > **Boundary Line**.
2. Select a boundary line.
3. Select **Review** > **Delete** > **OK**.

Deleting All Saved Waypoints, Routes, and Tracks

Select **Nav Info** > **Manage Data** > **Clear User Data** > **All** > **OK**.

Combinations

The Combination screen shows a combination of different screens at the same time. The number of options available on the Combination screen depends on the optional devices you have connected to your chartplotter and whether you are using premium maps.

Selecting a Combination

1. Select **Combinations**.
2. Select a combination.

Customizing a Combination Screen

1. Select **Combinations**.
2. Use the arrow keys to highlight a Combination screen.
3. Select **Configure**.
4. Select an option:
   - To change the name, select **Name**, and enter a new name.
   - To change the arrangement of the information on the screen, select **Change Layout**, and select a new layout.
   - To change the information shown on the screen, select **Change Function**, and select new information.
   - To customize the data shown on the screen, select **Overlay Numbers** (*Overlay Numbers Settings*, page 6).
   - To resize the information areas shown on the screen, select **Resize Combination**.

Creating a Custom Combination Screen

You can create a custom Combination screen to suit your needs.

1. Select **Combinations** > **Add**.
2. Select a layout.
3. Select the information to display in the combination.
4. Enter a name for the combination, and select **Done**.

Deleting a Combination Screen

1. Select **Combinations**.
2. Use the arrow keys to highlight a Combination screen.
3. Select **Configure** > **Remove Combination**.

Gauges and Almanac Data

Gauges provide various information about the trip, environment, and wind. Some data requires connection to compatible sensors.

The chartplotters also provide almanac information about tides, currents, and the sun and moon, such as rise and set times.

Viewing the Compass

You can view information about your bearing, heading, and route using the compass.

Select **Gauges** > **Compass**.

Viewing Trip Gauges

Trip gauges show information for odometer, speed, time, and fuel for your present trip.

Select **Gauges** > **Trip Data**.

Resetting Trip Gauges

1. Select **Gauges** > **Trip Data** > **MENU**.
2. Select an option:
   - To set all the readings for the present trip to zero, select **Reset Trip**.
   - To set the maximum speed reading to zero, select **Reset Maximum Speed**.
   - To set the odometer reading to zero, select **Reset Odometer**.
   - To set all the readings to zero, select **Reset All**.

Viewing the Wind Gauges

Before you can view wind information, you must have a wind sensor connected to the chartplotter.

Select **Gauges** > **Wind**.

Configuring the Speed Source

You can specify whether the vessel speed data displayed on the gauge and used for wind calculations is based on water speed or GPS speed.

1. Select **Gauges** > **Wind** > **MENU** > **Speed Display**.
2. Select an option:
   - To calculate the vessel speed based on data from the water-speed sensor, select **Water Speed**.
   - To calculate the vessel speed based on GPS data, select **GPS Speed**.

Configuring the Heading Source of the Wind Gauge

You can specify the source of the heading displayed on the wind gauge. Magnetic heading is the heading data received from a heading sensor, and GPS heading is calculated by your chartplotter GPS (course over ground).

1. Select **Gauges** > **Wind** > **MENU** > **Heading Source**.
2. Select **GPS Hdg** or **Magnetic**.

Selecting the Range of the Close-Hauled Wind Gauge

You can specify the range of the close-hauled wind gauge for both the upwind scale and the downwind scale.

1. Select **Gauges** > **Wind** > **MENU**.
2. Select an option:
   - To set the maximum and minimum values that appear when the upwind close-hauled wind gauge appears, select **Change Upwind Scale**, and set the angles.
   - To set the maximum and minimum values that appear when the downwind close-hauled wind gauge appears, select **Change Downwind Scale**, and set the angles.

Viewing the Environment Gauges

Select **Gauges** > **Environment**.

Configuring the Alignment of the Wind Gauge

You can specify the alignment of the wind gauge on the environment gauges.

1. Select **Gauges** > **Environment** > **MENU** > **Alignment**.
2. Select an option:
   - To set the top of the wind gauge to a North heading, select **North Up**.
   - To rotate the gauge so the direction in which you are moving is at the top, select **Head Up**.

Configuring the Heading Source of the Environment Gauge

You can specify the source of the heading displayed on the environment gauge. Magnetic heading is the heading data received from a heading sensor, and GPS heading is calculated by your chartplotter GPS (course over ground).

1. Select **Gauges** > **Environment** > **MENU** > **Heading Source**.
2. Select **GPS Hdg** or **Magnetic**.

Setting the Barometer Reference Time

You can specify the reference time used to calculate the barometer trend. The trend is indicated in the barometer field.

1. Select **Gauges** > **Environment** > **MENU** > **Pressure Ref. Time**.
2. Select an option.

Tide, Current, and Celestial Information

Tide Station Information

You can view information about a tide station for a specific date and time, including the tide height, and when the next high and low tides will occur. By default, the chartplotter shows tide information for the most recently viewed tide station and for the present date and time.

Select **Nav Info** > **Tides & Currents** > **Tides**.

Current Station Information

NOTE: Current station information is available with certain detailed maps.

You can view information about a current station for a specific date and time, including the current speed and level of the current. By default, the chartplotter shows current information for the most recently viewed current station and for the present date and time.

Select **Nav Info** > **Tides & Currents** > **Currents**.

Celestial Information

You can view information about sunrise, sunset, moonrise, moonset, moon phase, and the approximate sky view location of the sun and moon. The center of the screen represents the sky overhead, and the outermost rings represent the horizon. By default, the chartplotter shows celestial information for the present date and time.

Select **Nav Info** > **Tides & Currents** > **Celestial**.

Viewing Tide Station, Current Station, or Celestial Information for a Different Date

1. Select **Nav Info** > **Tides & Currents**.
2. Select **Tides**, **Currents**, or **Celestial**.
3. Select an option.
   - To view information for a different date, select **Change Date** > **Manual**, and enter a date.
   - To view information for today, select **Change Date** > **Current**.
   - If available, to view information for the day after the date shown, select **Next Day**.
   - If available, to view information for the day before the date shown, select **Previous Day**.

Viewing Information for a Different Tide or Current Station

1. Select **Nav Info** > **Tides & Currents**.
2. Select **Tides** or **Currents**.
3. Select **Nearby Stations**.
4. Select a station.

Viewing Almanac Information from the Navigation Chart

1. From a chart or 3D chart view, select a location.
2. Select **Information**.

3 Select **Tides**, **Currents**, or **Celestial**.

Sonar

When properly connected to an optional Garmin sounder module and a transducer, your compatible chartplotter can be used as a fishfinder. There are different sonar views to help you view the fish in the area.

The adjustments you can make to each sonar view vary depending on the view you are in and the chartplotter model, sounder module, and transducer you have connected.

Sonar Views

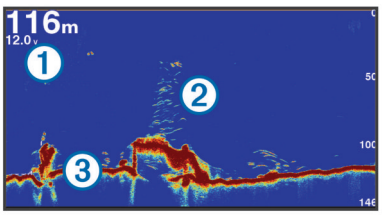
The sonar views available vary depending on the type of transducer and optional sounder module connected to the chartplotter. For example, you can view the Garmin ClearVü screen only if you have a Garmin ClearVü transducer connected.

There are four basic styles of sonar views available: a full-screen view, a split-screen view that combines two or more views such as Traditional and Garmin ClearVü, a split-zoom view, and a split-frequency view that displays two different frequencies. You can customize the settings for each view in the screen. For example, if you are viewing the Split Frequency view, you can adjust the gain for each of the frequencies separately.

If you do not see an arrangement of sonar views to suit your needs, you can create a custom Combination screen (*Creating a Custom Combination Screen*, page 11).

Full-Screen Sonar View

There are several full-screen views available, depending on the equipment connected. The full-screen sonar views show a large image of the sonar readings from a transducer. The range scale along the right side of the screen shows the depth of detected objects as the screen scrolls from the right to the left.



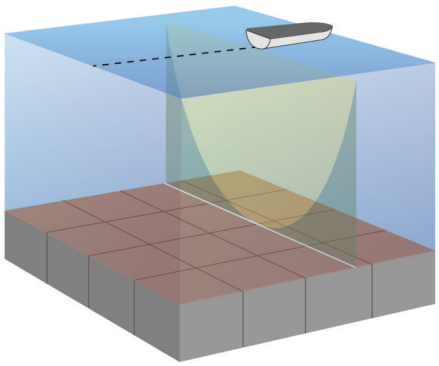
①	Depth information
②	Suspended targets or fish
③	Bottom of the body of water

Garmin ClearVü Sonar View

NOTE: To receive Garmin ClearVü scanning sonar, you need a compatible chartplotter or fishfinder and a compatible transducer.

Garmin ClearVü high-frequency sonar provides a detailed picture of the fishing environment around the boat in a detailed representation of structures the boat is passing over.

Traditional transducers emit a conical beam. The Garmin ClearVü scanning sonar technology emits two narrow beams, similar to the shape of the beam in a copying machine. These beams provide a clearer, picture-like image of what is beneath the boat.

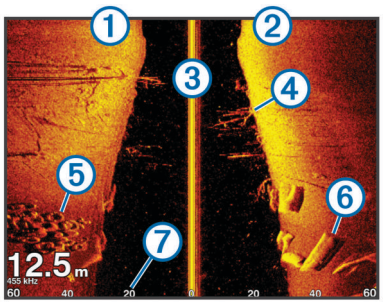


SideVü Sonar View

NOTE: Not all models provide built-in SideVü sonar support. If your model does not provide built-in SideVü sonar, you need a compatible sounder module and compatible SideVü transducer.

If your model does provide built-in SideVü sonar, you need a compatible SideVü transducer.

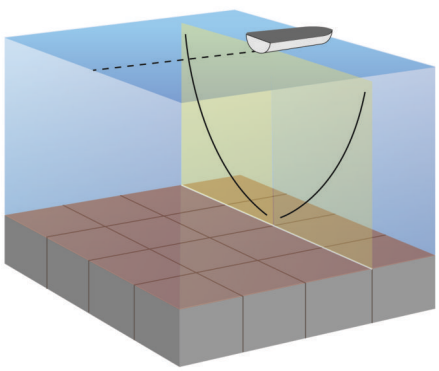
SideVü scanning sonar technology shows you a picture of what lies to the sides of the boat. You can use this as a search tool to find structures and fish.



①	Left side of the boat
②	Right side of the boat
③	The transducer on your vessel
④	Trees
⑤	Old tires
⑥	Logs
⑦	Distance from the side of the boat
⑧	Water between the vessel and the bottom

SideVü Scanning Technology

Instead of a more common conical beam, the SideVü transducer uses a flat beam to scan the water and bottom to the sides of your boat.



Split-Zoom Sonar View

The split-zoom sonar view shows a full-view graph of sonar readings, and a magnified portion of that graph, on the same screen.

Select **Sonar** > **Split Zoom**.

Split-Frequency Sonar View

In the split-frequency sonar view, one side of the screen shows a full-view graph of high frequency sonar data, and the other side of the screen shows a full-view graph of lower frequency sonar data.

NOTE: The split-frequency sonar view requires the use of a dual-frequency transducer.

Select **Sonar** > **Split Frequency**.

Pausing the Sonar Display

From a Sonar view, select **MENU** > **Pause Sonar**.

Creating a Waypoint on the Sonar Screen

1. From a sonar view, select **MENU** > **Pause Sonar**.
2. Select the location of the waypoint.
3. Select **New Waypoint**.

Viewing Sonar History

You can scroll the sonar display to view historical sonar data.

1. From a sonar view, select **MENU** > **Pause Sonar**.
2. Drag the screen or use the arrow keys.

Adjusting the Level of Detail

You can control the level of detail and noise shown on the sonar screen either by adjusting the gain for traditional transducers, or by adjusting the brightness for Garmin ClearVü and SideVü/ClearVü transducers.

If you want to see the highest intensity signal returns on the screen, you can lower the gain or brightness to remove lower intensity returns and noise. If you want to see all return information, you can increase the gain or brightness to see more information on the screen. This also increases noise, and can make it more difficult to recognize actual returns.

1. From a sonar view, select **MENU**.
2. Select **Gain** or **Brightness**.
3. Select an option:
   - To increase or decrease the gain or brightness manually, select **Up** or **Down**.
   - To allow the chartplotter to adjust the gain or brightness automatically, select an automatic option.

Adjusting the Color Intensity

You can adjust the intensity of colors and highlight areas of interest on the sonar screen by adjusting the color gain for traditional transducers or the contrast for Garmin ClearVü and SideVü/ClearVü transducers. This setting works best after you have adjusted the level of detail shown on the screen using the gain or brightness settings.

If you want to highlight smaller fish targets or create a higher intensity display of a target, you can increase the color gain or contrast setting. This causes a loss in the differentiation of the high intensity returns at the bottom. If you want to reduce the intensity of the return, you can reduce the color gain or contrast.

1. From a sonar view, select **MENU**.
2. Select an option:
   - While in the Garmin ClearVü or SideVü sonar view, select **Contrast**.
   - While in another sonar view, select **Sonar Setup** > **Advanced** > **Color Gain**.
3. Select an option:
   - To increase or decrease the color intensity manually, select **Up** or **Down**.
   - To use the default setting, select **Default**.

Adjusting the Range of the Depth or Width Scale

You can adjust the range of the depth scale traditional and Garmin ClearVü sonar views and the range of the width scale for the SideVü sonar view.

Allowing the device to adjust the range automatically keeps the bottom within the lower or outer third of the sonar screen, and can be useful for tracking a bottom that has minimal or moderate terrain changes.

Manually adjusting the range enables you to view a specified range, which can be useful for tracking a bottom that has large terrain changes, such as a drop-offs or cliffs. The bottom can appear on the screen as long as it appears within the range you have set.

1. From a sonar view, select **MENU** > **Range**.
2. Select an option:
   - To allow the chartplotter to adjust the range automatically, select **Auto**.
   - To increase or decrease the range manually, select **Up** or **Down**.

   TIP: From the sonar screen, you can select + or − to manually adjust the range.

Setting the Zoom Level on the Sonar Screen

1. From a sonar view, select **MENU** > **Zoom**.
2. Select an option:
   - To zoom in on the sonar data from the bottom depth, select **Bottom Lock**.

     NOTE: When the bottom lock feature is enabled, the **Range** feature changes to **Span**.
   - To set the depth range of the magnified area manually, select **Manual**, select **View Up** or **View Down** to set the depth range of the magnified area, and select **Zoom In** or **Zoom Out** to increase or decrease the magnification of the magnified area.
   - To set the depth and zoom automatically, select **Auto**.
   - To cancel the zoom, select **No Zoom**.

Sonar Frequencies

NOTE: The frequencies available depend on the chartplotter, sounder modules, and transducer being used.

Adjusting the frequency helps adapt the sonar for your particular goals and the present depth of the water.

Higher frequencies use narrow beam widths, and are better for high-speed operation and rough sea conditions. Bottom definition and thermocline definition can be better when using a higher frequency.

Lower frequencies use wider beam widths, which can let the fisherman see more targets, but could also generate more surface noise and reduce bottom signal continuity during rough sea conditions. Wider beam widths generate larger arches for fish target returns, making them ideal for locating fish. Wider beam widths also perform better in deep water, because the lower frequency has better deep water penetration

Chirp frequencies allow you to sweep each pulse through a range of frequencies, resulting in better target separation in deep water. Chirp can be used to distinctly identify targets, like

individual fish in a school, and for deep water applications. Chirp generally performs better than single frequency applications. Because some fish targets may show up better using a fixed frequency, you should consider your goals and water conditions when using Chirp.

Some sonar black boxes and transducers also provide the ability to customize preset frequencies for each transducer element, which enables you to change the frequency quickly using the presets as the water and your goals change.

Viewing two frequencies concurrently using the Split Frequency view, allows you to see deeper with the lower frequency return and at the same time see more detail from the higher frequency return.

Selecting Frequencies

NOTE: You cannot adjust the frequency for all sonar views and transducers.

You can indicate which frequencies appear on the sonar screen.

1. From a sonar view, select **MENU** > **Frequency**.
2. Select a frequency suited to your needs and water depth.

   For more information on frequencies, see *Sonar Frequencies*, page 14.

Creating a Frequency Preset

NOTE: Not available with all transducers.

You can create a preset to save a specific sonar frequency, which allows you to change frequencies quickly.

1. From a sonar view, select **MENU** > **Frequency**.
2. Select **Add**.
3. Enter a frequency.

Turning On the A-Scope

NOTE: This feature is not available in all sonar views.

The a-scope is a vertical flasher along the right side of the full-screen sonar view. This feature expands the most recently received sonar data so that it is easier to see. It can also be helpful for detecting fish that are close to the bottom.

From a sonar view, select **MENU** > **Sonar Setup** > **Appearance** > **A-Scope**.

Selecting the Transducer Type

Before you can select the transducer type, you must know what kind of transducer you have.

If you are connecting a transducer that was not included with the chartplotter, you may need to set the transducer type to make the sonar function properly. If the device automatically detected your transducer, this option does not appear.

1. From a sonar view, select **MENU** > **Sonar Setup** > **Installation** > **Transducer Type**.
2. Select an option:
   - If you have a 200/77 kHz, dual-beam transducer, select **Dual Beam**.
   - If you have a 200/50 kHz, dual-frequency transducer, select **Dual Frequency**.
   - If you have another type of transducer, select it from the list.

Sonar Setup

Sonar Settings

NOTE: Not all options and settings apply to all models, sounder modules, and transducers.

From a sonar view, select **MENU** > **Sonar Setup**.

Depth Line: Shows a quick-reference depth line.

Scroll Speed: Sets the rate at which the sonar scrolls from right to left.

In shallow water you might want to slow the scroll speed to extend the length of time the information is displayed on screen. In deeper water you might want to increase the scroll speed.

On-screen Control: Sets what the buttons on the sonar screen control. This is available for touchscreen devices.

Range Lines: Shows the vertical lines indicating the distance to the right and left of the boat. Available for SideVü sonar view.

Color Scheme: Sets the color scheme of the sonar view. This setting might be available in the Appearance menu.

The high contrast color schemes provide darker color assignments to the low intensity returns. The low contrast color schemes provide color assignments to the low intensity returns that are similar to the background color.

Appearance: See *Sonar Appearance Settings*, page 15.

Overlay Numbers: Sets the data shown on the sonar screen.

Advanced: See *Advanced Sonar Settings*, page 15.

Installation: Restores the default sonar settings.

Sonar Appearance Settings

NOTE: Not all options and settings apply to all models, sounder modules, and transducers.

From a Sonar view, select **MENU** > **Sonar Setup** > **Appearance**.

Color Scheme: Sets the color scheme.

Edge: Highlights the strongest signal from the bottom to help define the hardness or softness of the signal.

A-Scope: Displays a vertical flasher along the right side of the screen that shows instantaneously the range to targets along a scale.

Pic. Advance: Allows the sonar picture to advance faster by drawing more than one column of data on the screen for each column of sounder data received. This is especially helpful when you are using the sounder in deep water, because the sonar signal takes longer to travel to the water bottom and back to the transducer.

The 1/1 setting draws one column of information on the screen per sounder return. The 2/1 setting draws two columns of information on the screen per sounder return, and so on for the 4/1 and 8/1 settings.

Color Rejection: Sets which colors are removed from the screen.

Fish Symbols: Sets how the sonar interprets suspended targets.

Advanced Sonar Settings

NOTE: Not all options and settings apply to all models, sounder modules, and transducers.

From a sonar view, select **MENU** > **Sonar Setup** > **Advanced**.

Interference: Adjusts the sensitivity to reduce the effects of interference from nearby sources of noise.

The lowest interference setting that achieves the desired improvement should be used to remove interference from the screen. Correcting installation issues that cause noise is the best way to eliminate interference.

Surface Noise: Hides surface noise to help reduce clutter. Wider beam widths (lower frequencies) can show more targets, but can generate more surface noise.

Color Gain: See *Adjusting the Level of Detail*, page 14.

TVG: Adjusts the appearance of returns to compensate for weakened sonar signals in deeper water, and reduces the appearance of noise near the surface. When the value of this setting is increased, the colors associated with low-level

noise and fish targets appear more consistent through various water depths. This setting also reduces the noise near the surface of the water.

Sonar Installation Settings

NOTE: Not all options and settings apply to all models, sounder modules, and transducers.

From a sonar view, select **MENU** > **Sonar Setup** > **Installation**.

Restore Sonar Defaults: Restores the factory default settings for the sonar view.

Transducer Type: Allows you to select the type of transducer that is connected to the device.

Flip Left/Right: Changes the orientation of the SideVü sonar view when the transducer is installed backward.

Sonar Alarm Settings

NOTE: Some settings require external accessories.

Select **Settings** > **Alarms** > **Sonar**.

Shallow Water: Sets an alarm to sound when the depth is less than the specified value.

Deep Water: Sets an alarm to sound when the depth is greater than the specified value.

Water Temp.: Sets an alarm to sound when the transducer reports a temperature that is 2°F (1.1°C) above or below the specified temperature.

Fish: Sets an alarm to sound when the device detects a suspended target.

- sets the alarm to sound when fish of all sizes are detected.
- sets the alarm to sound only when medium or large fish are detected.
- sets the alarm to sound only when large fish are detected.

Sonar Recordings

Recording the Sonar Display

NOTE: Not all models support sonar recording.

1. Insert a memory card into the card slot.
2. From a Sonar view, select **MENU** > **Record Sonar**.

Stopping the Sonar Recording

Before you can stop recording the sonar, you must begin recording it (*Recording the Sonar Display*, page 16).

From a sonar view, select **MENU** > **Stop Recording**.

Deleting a Sonar Recording

1. Insert a memory card into the card slot.
2. Select **Sonar** > **Sonar Recordings**.
3. Select a recording.
4. Select **Delete**.

Depth and Water Temperature Graphs

If you are using a depth-capable transducer, or are receiving water depth information over NMEA® 0183 or NMEA 2000®, you can view a graphic log of depth readings over time. If you are using a temperature-capable transducer, or are receiving water temperature information over NMEA 0183 or NMEA 2000, you can view a graphic log of temperature readings over time.

The graphs scroll to the left as information is received.

Select **Sonar** > **Data Graphs**.

Setting the Depth and Water Temperature Graph Range and Time Scales

You can indicate the amount of time and the range of depth that appear in the depth and water temperature graphs.

1. Select **Sonar** > **Data Graphs** > **MENU**.
2. Select **Depth Graph Settings** or **Temperature Graph Settings**.
3. Select an option:
   - To set a time-elapsed scale, select **Duration**. The default setting is 10 minutes. Increasing the time-elapsed scale allows you to view variations over a longer period of time. Decreasing the time-elapsed scale allows you to view more detail over a shorter period of time.
   - To set the depth-range or temperature-range scale, select **Scale**. Increasing the scale allows you to view more variation in readings. Decreasing the scale allows you to view more detail in the variation.

Digital Selective Calling

Networked Chartplotter and VHF Radio Functionality

If you have a NMEA 0183 VHF radio connected to your chartplotter, these features are enabled.

- The chartplotter can transfer your GPS position to your radio. If your radio is capable, GPS position information is transmitted with DSC calls.
- The chartplotter can receive digital selective calling (DSC) distress and position information from the radio.
- The chartplotter can track the positions of vessels sending position reports.

Turning On DSC

Select **Settings** > **Other Vessels** > **DSC**.

DSC List

The DSC list is a log of the most recent DSC calls and other DSC contacts you have entered. The DSC list can contain up to 100 entries. The DSC list shows the most recent call from a boat. If a second call is received from the same boat, it replaces the first call in the call list.

Viewing the DSC List

Before you can view the DSC list, the chartplotter must be connected to a VHF radio that supports DSC.

Select **Nav Info** > **Other Vessels** > **DSC List**.

Adding a DSC Contact

You can add a vessel to your DSC list. You can make calls to a DSC contact from the chartplotter.

1. Select **Nav Info** > **Other Vessels** > **DSC List** > **Add Contact**.
2. Enter the Maritime Mobile Service Identity (MMSI) of the vessel.
3. Enter the name of the vessel.

Incoming Distress Calls

If your compatible chartplotter and VHF radio are connected using NMEA 0183, your chartplotter alerts you when your VHF radio receives a DSC distress call. If position information was sent with the distress call, that information is also available and recorded with the call.

designates a distress call in the DSC list and marks the position of the vessel on the Navigation chart at the time of the DSC distress call.

Navigating to a Vessel in Distress

designates a distress call in the DSC list and marks the position of a vessel on the Navigation chart at the time of the DSC distress call.

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Navigate To**.
4. Select **Go To** or **Route To**.

Position Tracking

When you connect the chartplotter to a VHF radio using NMEA 0183, you can track vessels that send position reports.

Every position report call received is logged in the DSC list (*DSC List*, page 16).

Viewing a Position Report

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select an option:
   - To switch to position report details, select ❯.
   - To switch to a Navigation chart marking the location, select ❮.
   - To switch to a Navigation chart marking the location, select **Next Page**.
   - To view the position report details, select **Previous Page**.

Navigating to a Tracked Vessel

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Navigate To**.
4. Select **Go To** or **Route To**.

Creating a Waypoint at the Position of a Tracked Vessel

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **New Waypoint**.

Editing Information in a Position Report

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Edit**.
   - To enter the name of the vessel, select **Name**.
   - To select a new symbol, select **Symbol**, if available.
   - To enter a comment, select **Comment**.
   - To show a trail line for the vessel if your radio is tracking the position of the vessel, select **Trail**.
   - To select a color for the trail line, select **Trail Line**.

Deleting a Position-Report Call

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Edit** > **Clear Report**.

Viewing Vessel Trails on the Chart

You can view trails for all tracked vessels on some chart views. By default, a black line indicates the path of the vessel, a black dot indicates each previously reported position of a tracked vessel, and a blue flag indicates the last reported position of the vessel.

1. From a chart or 3D chart view, select **MENU** > **Other Vessels** > **DSC Trails**.
2. Select the number of hours to show tracked vessels on the chart.

   For example, if you select 4 Hours, all trail points that are less than four hours old appear for all tracked vessels.

Individual Routine Calls

When you connect the chartplotter to a Garmin VHF radio, you can use the chartplotter interface to set up an individual routine call.

When setting up an individual routine call from your chartplotter, you can select the DSC channel on which you want to communicate. The radio transmits this request with your call.

Selecting a DSC Channel

NOTE: The selection of a DSC channel is limited to those channels that are available in all frequency bands. The default channel is 72. If you select a different channel, the chartplotter uses that channel for subsequent calls until you call using another channel.

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a vessel or a station to call.
3. Select **Call with Radio** > **Channel**.
4. Select an available channel.

Making an Individual Routine Call

NOTE: When initiating a call from the chartplotter, if the radio does not have an MMSI number programmed, the radio will not receive call information.

1. Select **Nav Info** > **Other Vessels** > **DSC List**.
2. Select a vessel or a station to call.
3. Select **Call with Radio**.
4. If necessary, select **Channel**, and select a new channel.
5. Select **Send**.

   The chartplotter sends information about the call to the radio.
6. On your Garmin VHF radio, select **Call**.

Making an Individual Routine Call to an AIS Target

1. From a chart or 3D chart view, select an AIS target.
2. Select **AIS Vessel** > **Call with Radio**.
3. If necessary, select **Channel**, and select a new channel.
4. Select **Send**.

   The chartplotter sends information about the call to the radio.
5. On your Garmin VHF radio, select **Call**.

Radar

⚠ WARNING

The marine radar transmits microwave energy that has the potential to be harmful to humans and animals. Before beginning radar transmission, verify that the area around the radar is clear. The radar transmits a beam approximately 12° above and below a line extending horizontally from the center of the radar. Avoid looking directly at the radar, because the eyes are the most susceptible parts of the body.

NOTE: Not all models support radar.

When you connect your compatible chartplotter to an optional Garmin marine radar, such as a GMR™ 1206 xHD or a GMR 24 HD, you can view more information about your surroundings.

The GMR transmits a narrow beam of microwave energy as it rotates to a 360° pattern. When the transmitted energy contacts a target, some of that energy is reflected back to the radar.

Radar Display Modes

NOTE: Not all modes are available with all radar devices and all chartplotters.

Select Radar, and select a mode.

Cruising Mode: Shows a full-screen image of the gathered radar information.

Harbor Mode: Intended for use in inland waters, this mode works best with short-range signals (2 nm or less).

Offshore Mode: Intended for use in open waters, this mode works best with long-range signals.

Sentry Mode: Allows you to put the radar into timed-transmit mode, in which you can configure a radar transmit and standby cycle to conserve power. You can also enable a guard zone in this mode, which identifies a safe zone around your boat. If you switch from Sentry mode to another mode, the radar switches to full-time transmission and disables all guard zones.

Radar Overlay Mode: Shows a full-screen image of the gathered radar information on top of the Navigation chart. The Radar overlay displays data based on the most recently used radar mode.

Dual Range Mode: Provides a side-by-side view of both short-range and long-range radar data.

Transmitting Radar Signals

NOTE: As a safety feature, the radar enters standby mode after it warms up. This gives you an opportunity to verify the area around the radar is clear before beginning radar transmission.

1. With the chartplotter off, connect your radar as described in the radar installation instructions.
2. Turn on the chartplotter.

   The radar warms up and a countdown alerts you when the radar is ready.
3. Select **Radar**.
4. Select a radar mode.

   A countdown message appears while the radar is starting up.
5. Select **MENU** > **Transmit Radar**.

Adjusting the Zoom Scale on the Radar Screen

The radar zoom scale, also called the radar signal range, represents the distance from your position (the center) to the outermost ring.

From a Radar screen, select + or −.

Each ring represents an even division of the zoom scale.

For example, if the zoom scale is set at 3 miles, each ring represents 1 mile from the center out.

Tips for Selecting a Radar Zoom Scale

The radar zoom scale, or radar signal range, indicates the length of the pulsed signal transmitted and received by the radar. As the range increases, the radar transmits longer pulses in order to reach distant targets. Closer targets, especially rain and waves, also reflect the longer pulses, which can add noise to the Radar screen. Viewing information about longer-range targets can also decrease the amount of space available on the Radar screen for viewing information about shorter-range targets.

- Determine what information you need to see on the Radar screen.

  For example, do you need information about nearby weather conditions or targets and traffic, or are you more concerned about distant weather conditions?
- Assess the environmental conditions where the radar is being used.

  Especially in inclement weather, longer-range radar signals can increase the clutter on the Radar screen and make it more difficult to view information about shorter-range targets. In rain, shorter-range radar signals can enable you to view information about nearby objects more effectively, if the rain clutter setting is configured optimally.
- Select the shortest effective range, given your reason for using radar and the present environmental conditions.

Sentry Mode

Sentry mode allows you to put the radar into timed-transmit mode, in which you can configure a radar transmit and standby cycle to conserve power. You can also enable a guard zone in this mode, which identifies a safe zone around your boat and sounds an alarm when a radar object enters the zone. Sentry mode works with all Garmin GMR model radars.

Enabling Timed Transmit

From the sentry screen, select **MENU** > **Sentry Setup** > **Timed Transmit** > **On**.

Setting the Standby and Transmit Times

Before you can set the standby and transmit times, you must enable timed transmit (*Enabling Timed Transmit*, page 18).

To help conserve power, you can indicate the radar standby time and the transmit time to implement periodic radar signal transmissions at set intervals.

1. From the sentry screen, select **MENU** > **Sentry Setup**.
2. Select **Stdby Time**.
3. Enter the time interval between radar signal transmissions.
4. Select **Transmit Time**.
5. Enter the duration of each radar signal transmission.

Enabling a Guard Zone

From the sentry screen, select **MENU** > **Sentry Setup** > **Enable Guard Zone**.

Defining a Circular Guard Zone

Before you can define the boundaries of the guard zone, you must enable a guard zone (*Enabling a Guard Zone*, page 18).

You can define a circular guard zone that completely encompasses your boat.

1. From the sentry screen, select **MENU** > **Sentry Setup** > **Adjust Guard Zone** > **Move Radar Guard Zone** > **Circle**.
2. Select the location of the outer guard zone circle.
3. Select the location of the inner guard zone circle to define the width of the guard zone.

Defining a Partial Guard Zone

You can define the boundaries of a guard zone that does not completely encompass your boat.

1. From the sentry screen, select **MENU** > **Sentry Setup** > **Adjust Guard Zone** > **Move Radar Guard Zone** > **Corner 1**.
2. Select the location of the inner-left guard-zone corner.
3. Select **Corner 2**.
4. Select the location of the outer-right guard-zone corner to define the width of the guard zone.

Marking a Waypoint on the Radar Screen

1. From a Radar screen or the Radar overlay, select a location.
2. Select **New Waypoint**.

Showing MARPA Targets in Sentry Mode

From the sentry screen, select **MENU** > **Sentry Setup** > **MARPA**.

Radar Targeting and MARPA

Radar targeting enables you to identify and track objects.

Mini-automatic radar plotting aid (MARPA) is primarily used for collision avoidance. To use MARPA, you assign a MARPA tag

to a target. The radar system automatically tracks the tagged object and provides you with information about the object, including the range, bearing, speed, GPS heading, nearest approach, and time to nearest approach. MARPA indicates the status of each tagged object (acquiring, lost, tracking, or dangerous), and the chartplotter can sound a collision alarm if the object enters your safe zone.

MARPA Targeting Symbols

	Acquiring a target. Concentric, dashed green rings radiate from the target while the radar is locking onto it.
	Target has been acquired. A solid green ring indicates the location of a target that the radar has locked onto. A dashed green line attached to the circle indicates the projected course over ground or the GPS heading of the target.
	Dangerous target is in range. A red ring flashes from the target while an alarm sounds and a message banner appears. After the alarm has been acknowledged, a solid red dot with a dashed red line attached to it indicates the location and the projected course over ground or the GPS heading of the target. If the safe-zone collision alarm has been set to Off, the target flashes, but the audible alarm does not sound and the alarm banner does not appear.
	Target has been lost. A solid green ring with an X through it indicates that the radar could not lock onto the target.
	Closest point of approach and time to closest point of approach to a dangerous target.

Assigning a MARPA Tag to an Object

Before you can use MARPA, you must have a heading sensor connected and an active GPS signal. The heading sensor must provide the NMEA 2000 parameter group number (PGN) 127250 or the NMEA 0183 HDM or HDG output sentence.

1. From the Harbor, Offshore, or Cruising Radar screen, select an object or location.
2. Select **Acquire Target** > **MARPA Target**.

Viewing Information about a MARPA-tagged Object

You can view the range, bearing, speed, and other information about a MARPA-tagged object.

1. From a radar screen, select a targeted object.
2. Select **MARPA Target**.

Removing a MARPA Tag from a Targeted Object

1. From the Radar screen, select a MARPA target.
2. Select **MARPA Target** > **Remove**.

Showing AIS Vessels on a Chart or 3D Chart View

Before you can use AIS, you must connect the chartplotter to an external AIS device and receive active transponder signals from other vessels.

You can configure how other vessels appear on a chart or on a 3D chart view. The display range configured for one chart or one 3D chart view are applied only to that chart or to that 3D chart view. The details, projected heading, and trails settings configured for one chart or one 3D chart view are applied to all charts and to all 3D chart views.

1. From a chart or 3D chart view, select **MENU** > **Other Vessels** > **AIS/MARPA Dis. Setup**.
2. Select an option:
   - To indicate the distance from your location in which AIS vessels appear, select **Display Range**, and select a distance.
   - To show details about AIS-activated vessels, select **Details** > **Show**.
   - To set the projected heading time for AIS-activated vessels, select **Proj. Heading**, and enter the time.
   - To show the tracks of AIS vessels, select **Trails**, and select the length of the track that appears using a trail.

Showing AIS Vessels on the Radar Screen

AIS requires the use of an external AIS device and active transponder signals from other vessels.

You can configure how other vessels appear on the Radar screen. If any setting (except the AIS display range) is configured for one radar mode, the setting is applied to every other radar mode. The details and projected heading settings configured for one radar mode are applied to every other radar mode and to the Radar overlay.

1. From a Radar screen or the Radar overlay, select **MENU** > **Other Vessels** > **AIS/MARPA Dis. Setup**.
2. Select an option:
   - To indicate the distance from your location within which AIS vessels appear, select **AIS Dis. Range**, and select a distance.
   - To show details about AIS-activated vessels, select **Details** > **Show**.
   - To set the projected heading time for AIS-activated vessels, select **Projected Heading**, and enter the time.
   - To show the tracks of AIS vessels, select **Trails**, and select the length of the track that appears.

Viewing a List of AIS Threats

From any Radar screen or the Radar overlay, you can view and customize the appearance of a list of AIS threats.

From a Radar screen or the Radar overlay, select **MENU** > **Other Vessels** > **AIS/MARPA List**.

VRM and EBL

The variable range marker (VRM) and the electronic bearing line (EBL) measure the distance and bearing from your boat to a target object. On the Radar screen, the VRM appears as a circle that is centered on the present location of your boat, and the EBL appears as a line that begins at the present location of your boat and intersects the VRM. The point of intersection is the target of the VRM and the EBL.

Showing the VRM and the EBL

The VRM and the EBL configured for one mode are applied to other radar modes.

NOTE: The VRM and the EBL cannot be changed in sentry mode.

From a Radar screen, select **MENU** > **Show VRM/EBL**.

Adjusting the VRM and the EBL

Before you can adjust the VRM and the EBL, you must show them on the Radar screen (*Showing the VRM and the EBL*, page 19).

You can adjust the diameter of the VRM and the angle of the EBL, which moves the intersection point of the VRM and the EBL. The VRM and the EBL configured for one mode are applied to all other radar modes.

1. From a Radar screen, select **MENU** > **Adjust VRM/EBL** > **Move VRM/EBL**.
2. Use the arrow keys to adjust the VRM and EBL.
3. Select **Done**.

Measuring the Range and Bearing to a Target Object

Before you can adjust the VRM and the EBL, you must show them on the Radar screen (*Showing the VRM and the EBL*, page 19).

1. From a Radar screen, select the target location.
2. Select **Measure Distance**.

   The range and the bearing to the target location appear in the upper-left corner of the screen.

Radar Overlay

When you connect your chartplotter to an optional Garmin marine radar, you can use the Radar overlay to overlay radar information on the Navigation chart or on the Fishing chart.

The Radar overlay superimposes radar information on the Navigation chart or the Fishing chart. Data appears on the Radar overlay based on the most recently used radar mode (such as Harbor, Offshore, or Sentry), and all settings configurations applied to the Radar overlay are also applied to the last-used radar mode. For example, if you use Harbor mode and then you switch to the Radar overlay, the Radar overlay would show Harbor mode radar data. If you changed the gain setting using the Radar overlay menu, the gain setting for Harbor mode would change automatically.

Radar Overlay and Chart Data Alignment

When using the Radar overlay, the chartplotter aligns radar data with chart data based on the boat heading, which is based by default on data from a magnetic heading sensor connected using a NMEA 0183 or NMEA 2000 network. If a heading sensor is not available, the boat heading is based on GPS tracking data.

GPS tracking data indicates the direction in which the boat is moving, not the direction in which the boat is pointing. If the boat is drifting backward or sideways due to a current or wind, the Radar overlay may not perfectly align with the chart data. This situation should be avoided by using boat-heading data from an electronic compass.

If the boat heading is based on data from a magnetic heading sensor or an automatic pilot, the heading data could be compromised due to incorrect setup, mechanical malfunction, magnetic interference, or other factors. If the heading data is compromised, the Radar overlay may not align perfectly with the chart data.

Stopping the Transmission of Radar Signals

From a Radar screen, select **MENU** > **Radar to Standby**.

TIP: Press ⏻ from any screen to quickly stop radar transmission.

Optimizing the Radar Display

You can adjust the radar display settings for reduced clutter and increased accuracy.

NOTE: You can optimize the radar display for each radar mode.

1. Select a radar range (*Range of Radar Signals*, page 20).
2. Restore the default value of the gain setting (*Adjusting Gain on the Radar Screen Automatically*, page 20).
3. Adjust the gain setting manually (*Adjusting Gain on the Radar Screen Manually*, page 20).

Range of Radar Signals

The range of the radar signal indicates the length of the pulsed signal transmitted and received by the radar. As the range increases, the radar transmits longer pulses in order to reach distant targets. Closer targets, especially rain and waves, also reflect the longer pulses, which can add noise to the Radar screen. Viewing information about longer-range targets can also decrease the amount of space available on the Radar screen for viewing information about shorter-range targets.

Radar Gain and Clutter

Adjusting Gain on the Radar Screen Automatically

The automatic gain setting for each radar mode is optimized for that mode, and may differ from the automatic gain setting used for another mode.

NOTE: Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

NOTE: Not all options and settings are available on all radar and chartplotter models.

1. From a Radar screen or the Radar overlay, select **MENU** > **Gain**.
2. Select an available option:
   - Select **Auto**.

     The chartplotter sets the gain automatically once, based on average conditions, the range of the radar signal, and the selected radar mode. The chartplotter does not adjust the gain automatically in response to changing conditions.
   - Select **Auto Harbor** or **Auto Offshore**.

     The chartplotter automatically adjusts the gain for the conditions.

Adjusting Gain on the Radar Screen Manually

For optimal radar performance, you can manually adjust the gain.

NOTE: Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

1. From a Radar screen or the Radar overlay, select **MENU** > **Gain**.
2. Select **Up** to raise the gain, until light speckles appear across the Radar screen.

   Data on the Radar screen is refreshed every few seconds. As a result, the effects of manually adjusting the gain may not appear instantly. Adjust the gain slowly.
3. Select **Down** to lower the gain until the speckles disappear.
4. If boats, land, or other targets are within range, select **Down** to lower the gain until the targets begin to blink.
5. Select **Up** to raise the gain until the boats, land, or other targets appear steadily lit on the Radar screen.
6. Minimize the appearance of nearby large objects, if necessary.
7. Minimize the appearance of side-lobe echoes, if necessary.

Minimizing Nearby Large-Object Interference

Nearby targets of significant size, such as jetty walls, can cause a very bright image of the target to appear on the Radar screen. This image can obscure smaller targets located near it.

NOTE: Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

1. From a Radar screen or the Radar overlay, select **MENU** > **Gain**.
2. Select **Down** to lower the gain until the smaller targets are clearly visible on the Radar screen.

   Reducing the gain to eliminate nearby large-object interference may cause smaller or distant targets to blink or disappear from the Radar screen.

Minimizing Side-Lobe Interference on the Radar Screen

Side-lobe interference may appear to streak outward from a target in a semi-circular pattern. Side-lobe effects can be avoided by reducing the gain or reducing the radar range.

NOTE: Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

1. From a Radar screen or the Radar overlay, select **MENU** > **Gain**.
2. Select **Down** to lower the gain until the semi-circular, streaked pattern disappears from the Radar screen.

   Reducing the gain to eliminate side-lobe interference may cause smaller or distant targets to blink or disappear from the Radar screen.

Adjusting Sea Clutter on the Radar Screen Automatically

You can set the chartplotter to automatically adjust the appearance of clutter caused by choppy sea conditions.

NOTE: Depending upon the radar in use, the sea clutter setting configured for use in one radar mode may or may not be applied to other radar modes or to the radar overlay.

NOTE: Not all options and settings are available on all radar and chartplotter models.

1. From a radar screen or the radar overlay, select **MENU** > **Noise Rejection** > **Sea Clutter**.
2. Select **Presets** or **Auto**.
3. Select a setting that reflects the present sea conditions.

When using a compatible radar model, the chartplotter adjusts the sea clutter based on the sea conditions automatically.

Adjusting Rain Clutter on the Radar Screen

You can adjust the appearance of clutter caused by rain. Reducing the radar range also can minimize rain clutter (*Adjusting the Zoom Scale on the Radar Screen*, page 18).

The rain clutter setting affects the appearance of nearby rain clutter and targets more than it affects the appearance of distant rain clutter and targets. A higher rain clutter setting reduces the appearance of clutter caused by nearby rain, but it can also reduce or eliminate the appearance of nearby targets.

NOTE: Depending upon the radar in use, the rain clutter settings configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

1. From a Radar screen or the Radar overlay, select **MENU** > **Noise Rejection** > **Rain Clutter**.
2. Select **Up** or **Down** to decrease or increase the appearance of nearby rain clutter until other targets are clearly visible on the Radar screen.

   Clutter caused by rain may still be visible.

Reducing Cross Talk Clutter on the Radar Screen

You can reduce the appearance of clutter caused by interference from another nearby radar source, when the cross talk reject setting is on.

NOTE: Depending upon the radar in use, the cross talk reject setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

From a Radar screen or the Radar overlay, select **MENU** > **Noise Rejection** > **Cross Talk Reject**.

Radar Display Settings

From any Radar screen or the Radar overlay, select **MENU** > **Radar Setup**.

Orientation: Sets the perspective of the radar display. The orientation setting applies to every radar mode. This setting does not apply to the Radar overlay.

Appearance: Sets the color scheme, look-ahead speed, and navigation appearance.

Front of Boat: Compensates for the physical location of the radar scanner on a boat, if the radar scanner does not align with the bow-stern axis.

Radar Appearance Settings

From a Radar screen, select **MENU** > **Radar Setup** > **Appearance**.

NOTE: These settings do not apply to the Radar overlay.

Color Scheme: Sets the color scheme.

Look-Ahead Speed: Shifts your present location toward the bottom of the screen automatically as your speed increases. Enter your top speed for the best results.

Heading Line: Shows an extension from the bow of the boat in the direction of travel on the radar screen.

Rings: Shows the range rings that help you to visualize distances on the radar screen.

Nav. Lines: Shows the navigation lines that indicate the course you have set using Route To, Guide To, or Go To.

Waypoints: Shows waypoints on the radar screen.

Front-of-Boat Offset

The front-of-boat offset compensates for the physical location of the radar scanner on a boat, if the radar scanner does not align with the bow-stern axis.

Measuring the Potential Front-of-Boat Offset

The front-of-boat offset compensates for the physical location of the radar scanner on a boat, if the radar scanner does not align with the bow-stern axis.

1. Using a magnetic compass, take an optical bearing of a stationary target located within viewable range.
2. Measure the target bearing on the radar.
3. If the bearing deviation is more than +/- 1°, set the front-of-boat offset.

Setting the Front-of-Boat Offset

Before you can set the front-of-boat offset, you must measure the potential front-of-boat offset.

The front-of-boat offset setting configured for use in one radar mode is applied to every other radar mode and to the Radar overlay.

1. From a Radar screen or the Radar overlay, select **MENU** > **Radar Setup** > **Front of Boat**.
2. Select **Up** or **Down** to adjust the offset.

Device Configuration

Turning On the Chartplotter Automatically

You can set the chartplotter to turn on automatically when the power is applied. Otherwise, you must turn on the chartplotter by pressing ⏻.

Select **Settings** > **System** > **Auto Power**.

NOTE: When Auto Power is On, and the chartplotter is turned off using ⏻, and power is removed and reapplied within less than two minutes, you may need to press ⏻ to restart the chartplotter.

System Settings

Select **Settings** > **System**.

Display: Adjusts the backlight brightness and color scheme.

Beeper: Turns on and off the tone that sounds for alarms and selections.

GPS: Provides information about the GPS satellite settings and fix.

Auto Power: Turns on the device automatically when power is applied (*Turning On the Chartplotter Automatically*, page 21).

Language: Sets the on-screen text language.

Speed Sources: Sets the source of the speed data used to calculate true wind speed or fuel economy. Water speed is the speed reading from a water-speed sensor, and GPS speed is calculated from your GPS position.

System Information: Provides information about the device and the software version.

Simulator: Turns on the simulator and allows you to set the speed and simulated location.

GPS Settings

Select **Settings** > **System** > **GPS**.

Skyview: Shows the relative position of GPS satellites in the sky.

GLONASS: Turns on or off GLONASS usage (Russia satellite system). When the system is used in situations with poor sky visibility, this configuration can be used in combination with GPS to provide more accurate position information.

WAAS/EGNOS: Turns on or off WAAS (in North America) or EGNOS (in Europe), which can provide more-accurate GPS position information. When using WAAS or EGNOS, the device may take longer to acquire satellites.

Speed Filter: Averages the speed of your vessel over a short period of time for smoother speed values.

Viewing the Event Log

The event log shows a list of system events.

Select **Settings** > **System** > **System Information** > **Event Log**.

Viewing System Software Information

You can view the software version, the basemap version, any supplemental map information (if applicable), the software version for an optional Garmin radar (if applicable), and the unit ID number. You may need this information to update the system software or to purchase additional map data information.

Select **Settings** > **System** > **System Information** > **Software Information**.

My Vessel Settings

NOTE: Some settings and options require additional charts or hardware.

Select **Settings** > **My Vessel**.

Keel Offset: Offsets the surface reading for the depth of a keel, making it possible to measure depth from the bottom of the keel instead of from the transducer location (*Setting the Keel Offset*, page 22).

Temp. Offset: Compensates for the water temperature reading from a NMEA 0183 water-temperature sensor or a temperature-capable transducer (*Setting the Water Temperature Offset*, page 22).

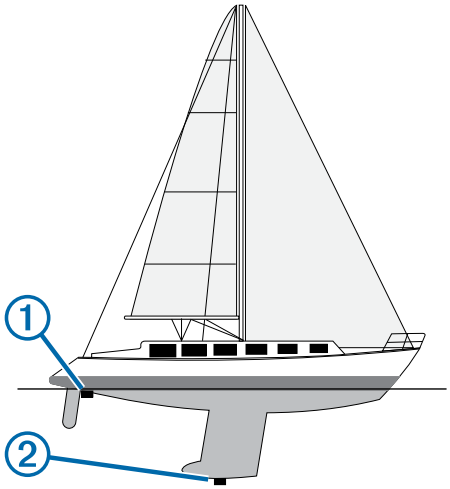
Calibrate Water Speed: Calibrates the speed-sensing transducer or sensor (*Calibrating a Water Speed Device*, page 22).

Vessel Type: Enables some chartplotter features based on the boat type.

Setting the Keel Offset

You can enter a keel offset to compensate the surface reading for the depth of a keel, making it possible to measure depth from the bottom of the keel instead of from the transducer location. Enter a positive number to offset for a keel. You can enter a negative number to compensate for a large vessel that may draw several feet of water.

1. Complete an action, based on the location of the transducer:
   - If the transducer is installed at the water line ①, measure the distance from the transducer location to the keel of the boat. Enter this value in steps 3 and 4 as a positive number.
   - If the transducer is installed at the bottom of the keel ②, measure the distance from the transducer to the water line. Enter this value in steps 3 and 4 as a negative number.



2. Select **Settings** > **My Vessel** > **Keel Offset**.
3. Select + or − based on the location of the transducer.
4. Enter the distance measured in step 1.

Setting the Water Temperature Offset

Before you can set the water temperature offset, you must have a NMEA 0183 water-temperature sensor or a temperature-capable transducer to measure water temperature.

The temperature offset compensates for the temperature reading from a temperature sensor.

1. Measure the water temperature using the temperature sensor or temperature-capable transducer that is connected to the chartplotter.
2. Measure the water temperature using a different temperature sensor or a thermometer that is known to be accurate.
3. Subtract the water temperature measured in step 1 from the water temperature measured in step 2.

   This is the temperature offset. Enter this value in step 5 as a positive number if the sensor connected to the chartplotter measures the water temperature as being colder than it actually is. Enter this value in step 5 as a negative number if the sensor connected to the chartplotter measures the water temperature as being warmer than it actually is.
4. Select **Settings** > **My Vessel** > **Temp. Offset**.
5. Enter the temperature offset calculated in step 3.

Calibrating a Water Speed Device

If you have a speed-sensing transducer connected to the chartplotter, you can calibrate that speed-sensing device to improve the accuracy of water-speed data displayed by the chartplotter.

1. Select **Settings** > **My Vessel** > **Calibrate Water Speed**.
2. Follow the on-screen instructions.

   If the boat is not moving fast enough or the speed sensor is not registering a speed, a message appears.
3. Select **OK**, and safely increase the boat speed.
4. If the message appears again, stop the boat, and ensure the speed-sensor wheel is not stuck.
5. If the wheel turns freely, check the cable connections.
6. If you continue to get the message, contact Garmin product support.

Communications Settings

NOTE: Some settings and options require additional charts or hardware.

Select **Settings** > **Communications**.

Serial Port 1: Sets the input/output format for port 1 to use when connecting the chartplotter to external NMEA devices, computers, or other Garmin devices.

Serial Port 2: Sets the input/output format for port 2 to use when connecting the chartplotter to external NMEA devices, computers, or other Garmin devices.

NMEA 0183 Setup: Sets the NMEA 0183 sentences the chartplotter transmits, how many digits to the right of the decimal point are transmitted in a NMEA output, and how waypoints are identified (*NMEA 0183 Settings*, page 23).

Marine Network: Allows you to view the devices with which you are sharing maps, sonar, or radar. Not available on all chartplotter models.

NOTE: You can only view networked data on a model that supports that data. For example, you cannot view networked radar on model that does not support radar.

NMEA 0183

The chartplotters support the NMEA 0183 standard, which is used to connect various NMEA 0183 devices, such as VHF radios, NMEA instruments, autopilots, wind sensors, and heading sensors.

To connect the chartplotter to optional NMEA 0183 devices, see the chartplotter installation instructions.

The approved NMEA 0183 sentences for the chartplotter are GPAPB, GPBOD, GPBWC, GPGGA, GPGLL, GPGSA, GPGSV, GPRMB, GPRMC, GPRTE, GPVTG, GPWPL, GPXTE, and Garmin proprietary sentences PGRME, PGRMM, and PGRMZ.

This chartplotter also includes support for the WPL sentence, DSC, and sonar NMEA 0183 input with support for the DPT (depth) or DBT, MTW (water temperature), and VHW (water temperature, speed, and heading) sentences.

NMEA 0183 Settings

Select **Settings** > **Communications** > **NMEA 0183 Setup**.

Sounder: Enables NMEA 0183 output sentences for the sounder (if applicable).

Route: Enables NMEA 0183 output sentences for routes.

System: Enables NMEA 0183 output sentences for system information.

Garmin: Enables NMEA 0183 output sentences for Garmin proprietary sentences.

Posn Precision: Adjusts the number of digits to the right of the decimal point for transmission of NMEA output.

Waypoint IDs: Sets the device to transmit waypoint names or numbers via NMEA 0183 while navigating. Using numbers may resolve compatibility issues with older NMEA 0183 autopilots.

Diagnostics: Displays NMEA 0183 diagnostic information.

Defaults: Restores the NMEA 0183 settings to the original factory defaults.

Setting Alarms

Navigation Alarms

Select **Settings** > **Alarms** > **Navigation**.

Arrival: Sets an alarm to sound when you are within a specified distance or time from a turn or a destination.

Anchor Drag: Sets an alarm to sound when you exceed a specified drift distance while anchored.

Off Course: Sets an alarm to sound when you are off course by a specified distance.

System Alarms

Alarm Clock: Sets an alarm clock.

Device Voltage: Sets an alarm to sound when the battery reaches a specified low voltage.

GPS Accuracy: Sets an alarm to sound when the GPS location accuracy falls outside the user-defined value.

Units Settings

Select **Settings** > **Units**.

System Units: Sets the unit format for the device.

Variance: Sets the magnetic declination, the angle between magnetic north and true north, for your present location.

North Reference: Sets the direction references used in calculating heading information. True sets geographic north as the north reference. Grid sets grid north as the north reference (000º). Magnetic sets the magnetic north as the north reference.

Position Format: Sets the position format in which a given location reading appears. Do not change this setting unless you are using a map or chart that specifies a different position format.

Map Datum: Sets the coordinate system on which the map is structured. Do not change this setting unless you are using a map or chart that specifies a different map datum.

Pressure Ref. Time: Sets the reference time used to calculate the barometer trend. The trend is indicated in the barometer field.

Time Format: Sets a 12-hour, 24-hour, or UTC time format.

Time Zone: Sets the time zone, or allows automatic selection based on GPS location.

Navigation Settings

NOTE: Some settings and options require additional charts or hardware.

Select **Settings** > **Navigation**.

Route Labels: Sets the type of labels shown with route turns on the map.

Auto Guidance: Sets the measurements for the Safe Depth, Safe Height, and Shoreline Distance, when you are using some premium maps.

Turn Transition Activ.: Sets the turn transition to be calculated based on time or distance.

Turn Transition Time: Sets how many minutes before the turn that you transition to it as the next leg, when Time is selected for the Turn Transition Activ.. You can raise this value to help improve the accuracy of the autopilot when navigating a route or an Auto Guidance line with many frequent turns or at higher speeds. For straighter routes or slower speeds, lowering this value can improve autopilot accuracy.

Turn Transition Dist.: Sets how far before the turn that you transition to it as the next leg, when Distance is selected for the Turn Transition Activ.. You can raise this value to help improve the accuracy of the autopilot when navigating a route or an Auto Guidance line with many frequent turns or at higher speeds. For straighter routes or slower speeds, lowering this value can improve autopilot accuracy.

Route Start: Selects a starting point for route navigation.

Auto Guidance Line Configurations

⚠ CAUTION

The Safe Depth and Safe Height settings influence how the chartplotter calculates an Auto Guidance line. If an area has an unknown water depth or an unknown obstacle height, the Auto Guidance line is not calculated in that area. If an area at the beginning or the end of an Auto Guidance line is shallower than the safe water depth or lower than the safe obstacle height, the Auto Guidance line is not calculated in that area. On the chart, the course through those areas appears as a gray line. When your boat enters one of those areas, a warning message appears.

NOTE: Auto Guidance is available with premium charts, in some areas.

You can set the parameters the chartplotter uses when calculating an Auto Guidance line.

Safe Depth: Sets the minimum depth (chart depth datum) the chartplotter uses when calculating an Auto Guidance line.

NOTE: The minimum safe depth for the premium charts is 3 feet. If you enter a Safe Depth value of less than 3 feet, the charts only use depths of 3 feet for Auto Guidance route calculations.

Safe Height: Sets the minimum height (chart height datum) of a bridge that your boat can safely travel under.

Shoreline Distance: Sets how close to the shore you want the Auto Guidance line to be placed. The Auto Guidance line may move if you change this setting while navigating. The available values for this setting are relative, not absolute. To ensure that the Auto Guidance line is placed the appropriate distance from shore, you can assess the placement of the Auto Guidance line using one or more familiar destinations that require navigation through a narrow waterway (*Adjusting the Distance from Shore*, page 24).

Adjusting the Distance from Shore

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

NOTE: Auto Guidance is available with premium charts, in some areas.

The Shoreline Distance setting indicates how close to the shore you want the Auto Guidance line to be placed. The Auto Guidance line may move if you change this setting while navigating. The available values for the Shoreline Distance setting are relative, not absolute. To ensure the Auto Guidance line is placed the appropriate distance from shore, you can assess the placement of the Auto Guidance line using one or more familiar destinations that require navigation through a narrow waterway.

1. Dock your vessel or drop the anchor.
2. Select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Normal**.
3. Select a destination that you have navigated to previously.
4. Select **Navigate To** > **Guide To**.
5. Review the placement of the Auto Guidance line, and determine whether the line safely avoids known obstacles and the turns enable efficient travel.
6. Select an option:
   - If the placement of the Auto Guidance line is satisfactory, select **MENU** > **Stop Navigation**, and proceed to step 10.
   - If the Auto Guidance line is too close to known obstacles, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Far**.
   - If the turns in the Auto Guidance line are too wide, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Near**.
7. If you selected **Near** or **Far** in step 6, review the placement of the Auto Guidance line, and determine whether the line safely avoids known obstacles and the turns enable efficient travel.

   Auto Guidance maintains a wide clearance from obstacles in open water, even if you set the Shoreline Distance setting to Near or Nearest. As a result, the chartplotter may not reposition the Auto Guidance line, unless the destination selected requires navigation through a narrow waterway.
8. Select an option:
   - If the placement of the Auto Guidance line is satisfactory, select **MENU** > **Stop Navigation**, and proceed to step 10.
   - If the Auto Guidance line is too close to known obstacles, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Farthest**.
   - If the turns in the Auto Guidance line are too wide, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Nearest**.
9. If you selected **Nearest** or **Farthest** in step 8, review the placement of the Auto Guidance line, and determine whether the line safely avoids known obstacles and the turns enable efficient travel.

   Auto Guidance maintains a wide clearance from obstacles in open water, even if you set the Shoreline Distance setting to Near or Nearest. As a result, the chartplotter may not reposition the Auto Guidance line, unless the destination selected requires navigation through a narrow waterway.
10. Repeat steps 3 through 9 at least once more, using a different destination each time, until you are familiar with the functionality of the Shoreline Distance setting.

Other Vessel Settings

When your compatible chartplotter is connected to an AIS device or VHF radio, you can set up how other vessels are displayed on the chartplotter.

Select **Settings** > **Other Vessels**.

AIS: Enables and disables AIS signal reception.

DSC: Enables and disables digital selective calling (DSC).

AIS/MARPA Alarm: Sets the collision alarm (*Setting the Safe-Zone Collision Alarm*, page 5 and *Enabling AIS Transmission Test Alerts*, page 5).

Viewing System Software Information

You can view the software version, the basemap version, any supplemental map information (if applicable), the software version for an optional Garmin radar (if applicable), and the unit ID number. You may need this information to update the system software or to purchase additional map data information.

Select **Settings** > **System** > **System Information** > **Software Information**.

Restoring the Original Chartplotter Factory Settings

NOTE: This will delete all settings information you have entered.

Select **Settings** > **System** > **System Information** > **Factory Settings**.

Chartplotter Data Management

Copying Waypoints, Routes, and Tracks to a Chartplotter

Before you can copy data to the chartplotter, you must have the latest version of MapSource® or HomePort™ software programs loaded on your computer and a memory card installed in the chartplotter.

Select an option:

- Copy the data from HomePort to the prepared memory card.

  For more information, see the HomePort help file.
- Copy the data from MapSource to the prepared memory card.

  For more information, see the MapSource help file.

Copying Data from a Memory Card

1. Insert a memory card into a card slot.
2. Select **Nav Info** > **Manage Data** > **Data Transfer** > **Card**.
3. If necessary, select the memory card to copy data to.
4. Select an option:
   - To transfer data from the memory card to the chartplotter and combine it with existing user data, select **Merge from Card**.
   - To transfer data from the memory card to the chartplotter and overwrite existing user data, select **Replace from Card**.
5. Select the file name.

Copying Waypoints, Routes, and Tracks to a Memory Card

1. Insert a memory card into the card slot.
2. Select **Nav Info** > **Manage Data** > **Data Transfer** > **Card** > **Save to Card**.
3. If necessary, select the memory card to copy data to.
4. Select an option:
   - To create a new file, select **Add New File**, and enter a name. The file name is saved with an .adm extension.
   - To add the information to an existing file, select the file from the list.

Copying Waypoints, Routes, and Tracks to or from all Chartplotters on the Network

You can transfer information for waypoints, routes, and tracks from one chartplotter connected to the Garmin Marine Network to every other chartplotter connected to the network. The transfer may take a long time, depending on the number of waypoints being transferred.

1. Select **Nav Info** > **Manage Data** > **Data Transfer** > **Network**.
2. Select an option:
   - To transfer data from the chartplotter to the other chartplotters connected to the network, select **Clone User Data**. Existing data is overwritten on those chartplotters.
   - To transfer data between all the chartplotters connected to the network, select **Merge User Data**. Unique data is combined with existing data on every chartplotter.

Backing Up Data to a Computer

1. Insert a memory card into the card slot.
2. Select **Nav Info** > **Manage Data** > **Data Transfer** > **Card** > **Save to Card**.
3. Select a file name from the list, or select **Add New File**.
4. Select **Save to Card**.

   The file name saves with a .adm extension.
5. Remove the memory card and insert it into a card reader attached to a computer.
6. Open the Garmin\UserData folder on the memory card.
7. Copy the backup file on the card and paste it to any location on the computer.

Restoring Backup Data to a Chartplotter

1. Insert a memory card into a card reader that is attached to the computer.
2. Copy a backup file from the computer to the memory card, into a folder named Garmin\UserData.
3. Insert a memory card into the card slot.
4. Select **Nav Info** > **Manage Data** > **Data Transfer** > **Card** > **Replace from Card**.

Saving System Information to a Memory Card

You can save system information to a memory card as a troubleshooting tool. A product support representative may ask you to use this information to retrieve data about the network.

1. Insert a memory card into the card slot.
2. Select **Settings** > **System** > **System Information** > **Garmin Devices** > **Save to Card**.
3. If necessary, select the memory card to save system information to.
4. Remove the memory card.

Appendix

Registering Your Device

Help us better support you by completing our online registration today.

- Go to http://my.garmin.com.
- Keep the original sales receipt, or a photocopy, in a safe place.

Cleaning the Screen

NOTICE

Cleaners containing ammonia will harm the anti-reflective coating.

The device is coated with a special anti-reflective coating which is very sensitive to skin oils, waxes, and abrasive cleaners.

1. Apply an eyeglass lens cleaner specified as safe for anti-reflective coatings to the cloth.
2. Gently wipe the screen with a soft, clean, lint-free cloth.

Screenshots

You can capture a screenshot of any screen shown on your chartplotter as a bitmap (.bmp) file. You can transfer the screenshot to your computer.

Capturing Screenshots

1. Insert a memory card into the card slot.
2. Select **Settings** > **System** > **Display** > **Screenshot Capture** > **On**.
3. Go to a screen you want to capture.
4. Hold **HOME** for at least six seconds.

Copying Screenshots to a Computer

1. Remove the memory card from the chartplotter, and insert it into a card reader that is attached to a computer.
2. From Windows® Explorer, open the Garmin\scrn folder on the memory card.
3. Copy a .bmp file from the card and paste it to any location on the computer.

Troubleshooting

Restoring the Original Chartplotter Factory Settings

NOTE: This will delete all settings information you have entered.

Select **Settings** > **System** > **System Information** > **Factory Settings**.

Viewing System Software Information

You can view the software version, the basemap version, any supplemental map information (if applicable), the software

version for an optional Garmin radar (if applicable), and the unit ID number. You may need this information to update the system software or to purchase additional map data information.

Select **Settings** > **System** > **System Information** > **Software Information**.

NMEA 0183 Information

Type	Sentence	Description
Transmit	GPAPB	APB: Heading or track controller (autopilot) sentence "B"
	GPBOD	BOD: Bearing (origin to destination)
	GPBWC	BWC: Bearing and distance to waypoint
	GPGGA	GGA: Global positioning system fix data
	GPGLL	GLL: Geographic position (latitude and longitude)
	GPGSA	GSA: GNSS DOP and active satellites
	GPGSV	GSV: GNSS satellites in view
	GPRMB	RMB: Recommended minimum navigation information
	GPRMC	RMC: Recommended minimum specific GNSS data
	GPRTE	RTE: Routes
	GPVTG	VTG: Course over ground and ground speed
	GPWPL	WPL: Waypoint location
	GPXTE	XTE: Cross track error
	PGRME	E: Estimated error
	PGRMM	M: Map datum
	PGRMZ	Z: Altitude
	SDDBT	DBT: Depth below transducer
	SDDPT	DPT: Depth
	SDMTW	MTW: Water temperature
	SDVHW	VHW: Water speed and heading
Receive	DPT	Depth
	DBT	Depth below transducer
	MTW	Water temperature
	VHW	Water speed and heading
	WPL	Waypoint location
	DSC	Digital selective calling information
	DSE	Expanded digital selective calling
	HDG	Heading, deviation, and variation
	HDM	Heading, magnetic
	MWD	Wind direction and speed
	MDA	Meteorological composite
	MWV	Wind speed and angle
	VDM	AIS VHF data-link message
	You can purchase complete information about National Marine Electronics Association (NMEA) format and sentences from: NMEA, Seven Riggs Avenue, Severna Park, MD 21146 USA (www.nmea.org)	

Software License Agreement

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